This document provides pertinent information concerning the reissuance of the VPDES Permit listed below. This permit is being processed as a minor, industrial permit. The discharge results from the operation of a potable water treatment plant serving the Town of Louisa, Town of Mineral and rural customers. This permit action consists of updating the proposed effluent limits to reflect the current Virginia Water Quality Standards (effective 6 January 2011) and updating permit language as appropriate. The effluent limitations and special conditions contained within this permit will maintain the Water Quality Standards of 9VAC25-260 et seq.

1.	Facility Name and Mailing Address:	Northeast Creek Water Treatment Plant P.O. Box 9 Louisa, VA 23093	SIC Code:	4941 WTP
	Facility Location:	3380 Jefferson Highway Louisa, VA 23093	County:	Louisa
	Facility Contact Name:	Hunter Martin / Water Operations Manager	Telephone Number:	540-967-1122
	Facility Email Address:	hmartin@louisa.org		
2.	Permit No.:	VA0058891	Expiration Date:	13 January 2015
	Other VPDES Permits:	Not Applicable		
	Other Permits:	PWSID 2109510 – public water		
	E2/E3/E4 Status:	Not Applicable		
3.	Owner Name:	Louisa County Water Authority		
	Owner Contact/Title:	Pam Baughman / Interim General Manager	Telephone Number:	540-967-1122
	Owner Email Address:	PBaughman@louisa.org		
4.	Application Complete Date:	18 July 2014		
	Permit Drafted By:	Douglas Frasier	Date Drafted:	19 August 2014
	Draft Permit Reviewed By:	Beth Biller	Date Reviewed:	20 August 2014
	Draft Permit Reviewed By:	Alison Thompson	Date Reviewed:	27 August 2014
	Public Comment Period:	Start Date: TBD 2014	End Date:	TBD 2014
5.	Receiving Waters Information:	See **Attachment 1** for the Flow Frequency Determination.*		
	Receiving Stream Name:	Northeast Creek	Stream Code:	8-NTH
	Drainage Area at Outfall:	10.07 square miles	River Mile:	3.64
	Stream Basin:	York River	Subbasin:	None
	Section:	3	Stream Class:	III
	Special Standards:	None	Waterbody ID:	VAN-F02R
	7Q10 Low Flow:	0.0 MGD	7Q10 High Flow:	0.0 MGD
	1Q10 Low Flow:	0.0 MGD	1Q10 High Flow:	0.0 MGD
	30Q10 Low Flow:	0.0 MGD	30Q10 High Flow:	0.0 MGD
	Harmonic Mean Flow:	0.0 MGD	30Q5 Flow:	0.0 MGD

*The memorandum does state that instream flow is present during critical periods; however, it has been, and continues to be, staff's best professional judgement to assume no instream flow present for permitting actions due to the 401 Certificate's minimum release requirement for the reservoir.

6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:

- X State Water Control Law
- X Clean Water Act
- X VPDES Permit Regulation
- X EPA NPDES Regulation
- ___ EPA Guidelines
- X Water Quality Standards
- X Other: 9VAC25-860 et seq. *General VPDES Permit for Potable Water Treatment Plants*

7. **Licensed Operator Requirements:** Not Applicable

8. **Reliability Class:** Not Applicable

9. **Facility / Permit Characterization:**

___	Private	X	Effluent Limited	___	Possible Interstate Effect
___	Federal	X	Water Quality Limited	___	Compliance Schedule
___	State	___	Whole Effluent Toxicity Program	___	Interim Limits in Permit
X	Water Treatment Plant	___	Pretreatment Program	___	Interim Limits in Other Document
X	eDMR Participant	X	Total Maximum Daily Load (TMDL)		

10. **Wastewater Sources and Treatment Description:**

Potable Water Production

The Northeast Creek WTP is a potable water plant, producing drinking water for the Town of Louisa, the Town of Mineral and rural customers of Louisa County. The facility withdraws water from the Northeast Creek Reservoir.

The treatment process consists of the following: chemical addition and coagulation in two contact basins, two rapid mixers, two slow mixing flocculating chambers, two sedimentation basins, two dual media filters and a clearwell prior to final distribution.

The raw water flows by gravity to the plant from the Northeast Creek Reservoir. The water is then pumped to the chemical feed area/flash mixer. Lime, alum and potassium permanganate are added to the raw makeup water prior to entering the flocculation basin. Soda ash solution is used as needed to adjust the pH of the raw water. The water then flows to the sedimentation basins where excess solids/floc is removed. The clarified water then flows to two mixed media (sand and anthracite coal) filters. The water is chlorinated for disinfection purposes prior to filtration. This ensures a complete mix of the chlorine solution and prevents undesirable growth on the filters. Finished water then flows to the clearwell; thereafter, it is pumped to the distribution system.

Wastewater Sources and Treatment

The sedimentation basins are cleaned of excess sediment twice per year. The sediment is sent to the backwash surge basin. The filters are back washed and the flows are also directed to the backwash surge basin. Solids are settled and pumped to two (2) sand drying beds for final dewatering prior to disposal at the Louisa County Landfill. The water/supernatant is discharged through Outfall 001 to Northeast Creek just below the plant. The discharge is considered intermittent and as such, only acute criteria will be considered for evaluation.

See **Attachment 2** for the NPDES Permit Rating Worksheet.

See **Attachment 3** for a facility schematic/diagram.

TABLE 1
OUTFALL DESCRIPTION

Number	Discharge Sources	Treatment	Maximum 30-day Flow	Latitude / Longitude
001	Industrial Wastewater	See Section 10	0.05 MGD	37° 58′ 36″ 77° 56′ 27″
See **Attachment 4** for the Pendleton topographic map.				

11. **Solids Treatment and Disposal Methods:**

Solids from the sedimentation basins are removed twice per year and dewatered via drying beds prior to final disposal at the Louisa County Landfill.

12. Other Permitted Discharges Located Within Waterbody VAN-F02R:

TABLE 2 DISCHARGES, INTAKES & MONITORING STATIONS			
ID / Permit Number	Facility Name	Type	Receiving Stream
VA0088421	Twin Oaks Community STP	Municipal Discharges Individual Permit	Polecat Creek
VA0076678	Shenandoah Crossing STP		Lickinghole Creek
VA0067954	Louisa Regional STP		Beaver Creek
VA0090743	Zion Crossroads WWTP		South Anna River
VAG406402	Dove Residence	Small Domestic Discharge ≤ 1,000 GPD General Permit	Fosters Creek, UT
VAG406491	Thompson Residence		South Anna River, UT
VAG406462	Barrett Grove Subdivision Lot 10		Harris Creek, UT
VAG406370	Cooke Residence		Beaver Creek, UT
VAG406463	Henson Residence		Harris Creek, UT
VAG406501	Jordan Residence		Desper Creek
VAG406464	Barrett Grove Subdivision Lot 20		Harris Creek, UT
VAG406492	Keenan Residence		Reedy Creek
VAG406457	Crickenberger Residence		Harris Creek, UT
VAG406527	CFS Resources LLC		Fosters Creek, UT

13. Material Storage:

TABLE 3 MATERIAL STORAGE		
Materials Description	Volume Stored	Spill/Stormwater Prevention Measures
Alum	6 tons maximum (50 lb. bags)	All materials are contained indoors with no floor drains or direct access to the environment.
Hydrated lime	2 tons maximum (50 lb. bags)	
Soda ash	5400 lbs. maximum (50 lb. bags)	
Activated carbon	1 ton maximum (50 lb. bags)	
Chlorine gas	1350 lbs. maximum (225 lb. bottles)	
Potassium permanganate	300 lbs. dry	
Delpac 20/20 polymer	(1) 55-gallon drum	
Karus 8600 orthophosphate	(1) 275-gallon tote	
Sodium fluoride	1000 lbs. maximum	

14. Site Inspection:

Compliance inspection performed by DEQ-NRO staff on 10 January 2008.

Please refer to **Attachment 5** for the inspection report.

15. Receiving Stream Water Quality and Water Quality Standards:

a. Ambient Water Quality Data

This facility is located on an unnamed tributary to Northeast Creek. DEQ Fish Tissue Monitoring Station 8-NTH004.05 is located within Northeast Creek Reservoir, approximately 0.40 mile upstream from Outfall 001. DEQ ambient station 8-NTH001.02 is located on Northeast Creek at Route 644, approximately 2.60 miles downstream from Outfall 001.

The following is the water quality summary for this segment of Northeast Creek, as taken from the 2012 Integrated Report:

DEQ monitoring stations located in this segment of Northeast Creek:
- *DEQ ambient monitoring station 8-NTH001.02, at Route 644*

The aquatic life, recreation and wildlife uses are considered fully supporting.

The fish consumption use was not assessed.

b. 303(d) Listed Stream Segments and Total Maximum Daily Loads (TMDLs)

TABLE 4
INFORMATION OF DOWNSTREAM 303 (d) IMPAIRMENTS AND TMDLs

Waterbody Name	Impaired Use	Cause	TMDL completed	WLA	Basis for WLA
Impairment Information in the 2012 Integrated Report					
South Anna River	Recreation	*E. coli*	Pamunkey River Basin Bacteria TMDL 8/2/2006	None (not expected to discharge pollutant)	----

This facility discharges to Northeast Creek in the Chesapeake Bay watershed in the York River basin. The receiving stream has been addressed in the Chesapeake Bay Total Maximum Daily Load (TMDL); approved by the Environmental Protection Agency (EPA) on 29 December 2010. The TMDL addresses dissolved oxygen (DO), chlorophyll a and submerged aquatic vegetation (SAV) impairments in the main stem Chesapeake Bay and its tidal tributaries by establishing non-point source load allocations (LAs) and point-source waste load allocations (WLAs) for total nitrogen (TN), total phosphorus (TP) and total suspended solids (TSS) to meet applicable Virginia Water Quality Standards contained within 9VAC25-260-185.

The Chesapeake Bay TDML implementation is currently administered in accordance with the Commonwealth of Virginia's Phase I Watershed Implementation Plan (WIP); approved by EPA on 29 December 2010. The approved WIP recognizes the *General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed of Virginia*, 9VAC25-820 et seq., as governing the nutrient allocations for non-significant Chesapeake Bay dischargers. Nutrient WLAs for non-significant industrial facilities were based on estimated TN and TP load levels obtained from Discharge Monitoring Report data and typical effluent concentrations established by Standard Industrial Classification (SIC) codes.

The TN and TP wasteload allocations contained within the WIP are considered aggregate allocations and are not included in individual permits for these types of facilities. All non-significant discharges with individual permits in existence as of 1 July 2005 are covered by rule under the watershed general permit. New or expanding facilities will be required to register under the watershed general permit as established under the Code of Virginia and will be assigned individual wasteload allocations as applicable. Similarly, the WIP also considers total suspended solids (TSS) WLAs for non-significant facilities to be aggregate allocations. TSS limits will be included in individual permits as required by technology-based requirements of the Clean Water Act. However, as long as the aggregated TSS permitted loads for all dischargers is less than the aggregate TSS load in the WIP, the individual permit will be considered consistent with the TMDL.

40 CFR 122.44(d)(1)(vii)(B) requires permits to be written to meet water quality standards and to be consistent with the assumptions and requirements of applicable WLAs. This facility is classified as a non-significant Chesapeake Bay discharger because it has a permitted equivalent load of less than 500,000 gallons per day into non-tidal waters. This facility has not applied for a new or expanded discharge; therefore, it is covered by rule under the 9VAC25-820 regulation.

Total nitrogen and total phosphorus monitoring requirements are not included in this individual permit, based on the fact that this facility does not store or utilize chemicals containing nitrogen or phosphorus compounds. Based on staff's review of total suspended solids data reported during the last permit term, this individual permit appears to be in conformance with the aforementioned; therefore, consistent with the Chesapeake Bay TMDL. Implementation of the full Chesapeake Bay WIP, including GP reductions combined with actions proposed in other source sectors is expected to adequately address ambient conditions such that the requirements of this individual permit are consistent with the Chesapeake Bay TMDL and will not cause an impairment or observed violation of the standards for D.O., chlorophyll a or SAV as required by 9VAC25-260-185.

The full planning statement is found in **Attachment 6**.

c. Receiving Stream Water Quality Criteria

Part IX of 9VAC25-260(360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving stream, Northeast Creek, is located within Section 3 of the York River basin and classified as Class III water.

At all times, Class III waters must achieve a dissolved oxygen (D.O.) of 4.0 mg/L or greater, a daily average D.O. of 5.0 mg/L or greater, a temperature that does not exceed 32° C and maintain a pH of 6.0 – 9.0 standard units (S.U.).

Some Water Quality Criteria are dependent on the pH, temperature and total hardness of the receiving stream and/or final effluent. These values were utilized to determine the criterion found in **Attachment 7** for the following pollutants:

pH and Temperature for Ammonia Criteria

The fresh water, aquatic life Water Quality Criteria for ammonia is dependent on the receiving stream and/or effluent pH and temperature. The 90th percentile pH and temperature values are utilized since they best represent the critical conditions of the receiving stream. Ambient water quality data for the stream are not available since the critical 30Q10 and 1Q10 flows of the receiving stream have been determined to be 0.0 MGD. In cases such as this, effluent pH and temperature data may be utilized to establish the ammonia water quality criteria. See **Attachment 8** for the derivation of the 90th percentile values of the effluent pH and temperature data from February 2009 to June 2014. A default temperature value of 25° C and an assumed temperature value of 15° C for summer and winter, respectively, were utilized since effluent data was not readily available.

The ammonia water quality criteria calculations are shown in **Attachment 7**.

This is a facility producing potable water. Ammonia chemicals are neither stored nor utilized at this plant; therefore if is staff's best professional judgement that limitations are not applicable to this facility.

Hardness Dependent Metals Criteria

The Water Quality Criteria for some metals are dependent on the receiving stream and/or effluent total hardness values (expressed as mg/L calcium carbonate). The 7Q10 of the receiving stream is zero and no ambient data is available and there is no total hardness data for this facility. Therefore, staff guidance suggests using a default hardness value of 50 mg/L $CaCO_3$ for streams east of the Blue Ridge.

The hardness dependent metals criteria in **Attachment 7** are based on this default value.

It is staff's best professional judgement that metals would not be present in appreciable amounts in the discharge of this water treatment plant due to the raw water source and chemicals being utilized during the production.

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Bacteria Criteria

The Virginia Water Quality Standards at 9VAC25-260-170.A. state that the following criteria shall apply to protect primary recreational uses in surface waters:

E. coli bacteria per 100 mL of water shall not exceed the following:

	Geometric Mean[1]
Freshwater *E. coli* (N/100 mL)	126

[1]For a minimum of four weekly samples taken during any calendar month

It is staff's best professional judgement that *E. coli* bacteria is not expected to be present within this industrial discharge; therefore, limitations are not applicable to this facility.

d. Receiving Stream Special Standards

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9VAC25-260-360, 370 and 380) designates the river basins, sections, classes and special standards for surface waters of the Commonwealth of Virginia. The receiving stream, Northeast Creek, is located within Section 3 of the York River Basin. This section has not been designated with a special standard.

16. Antidegradation (9VAC25-260-30):

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The receiving stream has been classified as Tier 1 based on staff's assumption that the critical flows are essentially 0.0 MGD. It is staff's best professional judgment that such streams are Tier 1 since the limits and monitoring requirements are set to maintain the Water Quality Standards. The proposed permit limits and monitoring requirements have been established by determining wasteload allocations which will result in attaining and/or maintaining all water quality criteria applicable to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

17. Effluent Screening, Wasteload Allocation and Effluent Limitation Development:

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points are equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards (WQS) are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLAs) are calculated. In this case since the critical 7Q10, 1Q10 and 30Q10 flows have been determined to be zero, the WLAs are equal to the WQS. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. In the case of ammonia evaluations, limits are needed if the 97th percentile of the thirty-day average effluent concentration value is greater than the chronic WLA. Effluent limitations are based on the most limiting WLA, the required sampling frequency and statistical characteristics of the effluent data.

a. Effluent Screening

Effluent data obtained from the permit application and the February 2009 – June 2014 Discharge Monitoring Reports (DMRs) has been reviewed and determined to be suitable for evaluation.

Please see **Attachment 8** for a summary of the aforementioned effluent data.

Total residual chlorine requires a wasteload allocation analysis since there is a potential for this pollutant to be present in the effluent.

b. Mixing Zones and Wasteload Allocations (WLAs)

Wasteload allocations (WLAs) are calculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

$$WLA = \frac{C_o [Q_e + (f) (Q_s)] - [(C_s) (f) (Q_s)]}{Q_e}$$

Where:
- WLA = Wasteload allocation
- C_o = In-stream water quality criteria
- Q_e = Design flow
- Q_s = Critical receiving stream flow (1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; harmonic mean for carcinogen-human health criteria; 30Q10 for ammonia criteria; and 30Q5 for non-carcinogen human health criteria)
- f = Decimal fraction of critical flow
- C_s = Mean background concentration of parameter in the receiving stream.

The water segment receiving the discharge via Outfall 001 has been determined to have critical 7Q10, 1Q10 and 30Q5 flows of 0.0 MGD. As such, there is no mixing zone and the WLA is equal to the C_o.

c. Effluent Limitations, Outfall 001 – Toxic Pollutants

9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9VAC25-31-230.D requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges.

Total Residual Chlorine (TRC)

Chlorine is used in the production process and is potentially present in the discharge in appreciable amounts. In accordance with current DEQ guidance, staff used a default data point of 20 mg/L and the calculated acute wasteload allocations to derive limits. As noted in Section 10 of the Fact Sheet, only acute criteria was considered applicable as this is not a continuous discharging facility.

The calculated limitations generated a monthly average and a daily maximum of 0.019 mg/L (see **Attachment 9**).

However, the general permit for water treatment plants, 9VAC25-860, has set a monthly average and daily maximum of 0.011 mg/L for TRC. Since these limitations are more stringent, TRC limitations of 0.011 mg/L as a monthly average and daily maximum are proposed to be carried forward with this reissuance.

d. Effluent Limitations and Monitoring, Outfall 001 – Conventional and Non-Conventional Pollutants

No changes to total suspended solids (TSS), total residual chlorine (TRC) and pH limitations are proposed.

pH limitations are set at the water quality criteria.

e. Effluent Limitations and Monitoring Summary

The effluent limitations are presented in the Section 19 of this Fact Sheet. Limitations were established for pH, total suspended solids and total residual chlorine.

Sample Type and Frequency are in accordance with the recommendations in the VPDES Permit Manual and the *General VPDES Permit for Potable Water Treatment Plants*, 9VAC25-860 et seq.

18. Antibacksliding:

All limits in this permit are at least as stringent as those previously established. Backsliding does not apply to this reissuance.

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19. Effluent Limitations/Monitoring Requirements for Outfall 001:

Maximum Flow of this Industrial Outfall is 0.05 MGD.
Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Daily Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	1/M	Estimate
pH	3	NL	NL	6.0 S.U.	9.0 S.U.	1/M	Grab
Total Suspended Solids (TSS)	2,3,4	30 mg/L	NA	NA	60 mg/L	1/M	5G/8H
Total Residual Chlorine (TRC)	3,4	0.011 mg/L	NA	NA	0.011 mg/L	1/M	Grab

The basis for the limitations codes are:

1. Federal Effluent Requirements
2. Best Professional Judgement
3. Water Quality Standards
4. 9VAC25-860 et seq.

MGD = Million gallons per day.
NA = Not applicable.
NL = No limit; monitor and report.
S.U. = Standard units.
1/M = Once every month.

5G/8H = 5 Grab/Eight Hour Composite – Consisting of five (5) grab samples collected at hourly intervals until the discharge ceases or five (5) grab samples taken at equal time intervals for the duration of the discharge if the discharge is less than 8 hours in length.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

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20. Other Permit Requirements:

Permit Section Part I.B. contains quantification levels and compliance reporting instructions

9VAC25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an instream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

21. Other Special Conditions:

a. O&M Manual Requirement. Required by Code of Virginia §62.1-44.19; VPDES Permit Regulation, 9VAC25-31-190.E and 40 CFR 122.41(e). The permittee shall maintain a current Operations and Maintenance (O&M) Manual. The permittee shall operate the treatment works in accordance with the O&M Manual and shall make the O&M Manual available to Department personnel for review upon request. Any changes in the practices and procedures followed by the permittee shall be documented in the O&M Manual within 90 days of the effective date of the changes. Non-compliance with the O&M Manual shall be deemed a violation of the permit.

b. Notification Levels. Required by VPDES Permit Regulation, 9VAC25-31-200.A. for existing manufacturing, commercial, mining and silvicultural dischargers. The permittee shall report discharges of toxic pollutants not limited by this permit that exceed notification levels.

c. Materials Handling/Storage. 9VAC25-31-50.A. prohibits the discharge of any wastes into State waters unless authorized by permit. Code of Virginia §62.1-44.16 and §62.1-44.17 authorize the Board to regulate the discharge of industrial waste or other waste.

d. Total Maximum Daily Load (TMDL) Reopener. Section 303(d) of the Clean Water Act requires that Total Maximum Daily Loads (TMDLs) be developed for streams listed as impaired. This special condition is to allow the permit to be reopened if necessary to bring it into compliance with any applicable TMDL approved for the receiving stream. The reopener recognizes that, according to Section 402(o)(1) of the Clean Water Act, limits and/or conditions may be either more or less stringent than those contained in this permit. Specifically, they can be relaxed if they are the result of a TMDL, basin plan or other wasteload allocation prepared under section 303 of the Act.

22. Permit Section Part II:

Required by VPDES Regulation 9VAC25-31-190, Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.

23. Changes to the Permit from the Previously Issued Permit:

a. Special Conditions:

None

b. Monitoring and Effluent Limitations:

Whole Effluent Toxicity monitoring was removed with this reissuance. Permittee completed one test during the last permit term; results indicated no acute toxicity.

24. Variances/Alternate Limits or Conditions:

Not Applicable.

25. Public Notice Information:

First Public Notice Date: TBD 2014 Second Public Notice Date: TBD 2014

Public Notice Information is required by 9VAC25-31-280.B. All pertinent information is on file and may be inspected and copied by contacting the: DEQ Northern Regional Office; 13901 Crown Court; Woodbridge, VA 22193; Telephone No. 703-583-3873, Douglas.Frasier@deq.virginia.gov. See **Attachment 10** for a copy of the public notice document.

Persons may comment in writing or by email to the DEQ on the proposed permit action and may request a public hearing, during the comment period. Comments shall include the name, address and telephone number of the writer and of all persons represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state 1) the reason why a hearing is requested; 2) a brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit; and 3) specific references, where possible, to terms and conditions of the permit with suggested revisions. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given. The public may request an electronic copy of the draft permit and fact sheet or review the draft permit and application at the DEQ Northern Regional Office by appointment.

26. Additional Comments:

Previous Board Action(s):	Not Applicable.
Staff Comments:	No comments were received.
State/Federal Agency Comments:	Not Applicable.
Public Comments:	No comments were received during the public notice.
Owner Comments:	TBD

Fact Sheet Attachments

Table of Contents

Northeast Creek Water Treatment Plant
VA0058891
2015 Reissuance

ATTACHMENT 1

Flow Frequency Determination

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY
Office of Water Quality Assessments
629 East Main Street P.O. Box 10009 Richmond, Virginia 23219

SUBJECT: Flow Frequency Determination
Northeast Creek WTP – #VA0058891

TO: Bev Carver, VRO

FROM: Paul E. Herman, P.E., WQAP

DATE: May 19, 1999

COPIES: Ron Gregory, Charles Martin, File

This memo supersedes my July 28, 1994, memo to you concerning the subject VPDES permit.

The Northeast Creek WTP discharges to the Northeast Creek near Mineral, VA. Stream flow frequencies are required at this site by the permit writer for the purpose of calculating effluent limitations for the VPDES permit.

The VDEQ conducted several flow measurements on the Northeast Creek from 1994 to 1998. The measurements were made above the WTP discharge point. The measurements correlated very well with the same day daily mean values from the continuous record gage on the Contrary Creek near Mineral, VA (#01670300). The gage was in operation from 1976 through 1986. Measurements were made at the gage site on the same day measurements were made on Northeast Creek above the WTP. The measurements at each site were plotted on a logarithmic graph and a best fit line was drawn through the data points. The required flow frequencies from the reference gage were plotted on the regression line and the associated flow frequencies at the measurement site/discharge point were determined from the graph.

The flow frequencies at the discharge point are governed by two criteria; the volume of the WTP withdrawal and the 401 Certificate's minimum release requirement. The withdrawal by the WTP is reflected in the flows measured above the WTP. The 401 Certificate states "the release from the impoundment shall be at least equal to the 7Q10 flow rate for the stream. If the flow entering the impoundment is less than the 7Q10, the release from the impoundment shall be equal to the flow entering the impoundment". The flow frequencies for the reference gage and the measurement site/discharge point are presented below:

Contrary Creek near Mineral, VA (#01670300):

Drainage Area = 5.53 mi^2

1Q10 = 0.04 cfs	High Flow 1Q10 = 0.64 cfs
7Q10 = 0.05 cfs	High Flow 7Q10 = 0.79 cfs
30Q5 = 0.21 cfs	HM = 0.90 cfs

Northeast Creek above Louisa WTP, near Mineral, VA (#01671925), and discharge point:

Drainage Area = 10.07 mi^2

0.000026 [illegible] = 1Q10 = <0.0001 cfs	High Flow 1Q10 = 0.09 cfs = 0.05814 mgd
0.000091 [illegible] = 7Q10 = 0.00014 cfs	High Flow 7Q10 = 0.16 cfs = 0.10336 mgd
0.003553 mgd = 30Q5 = 0.0055 cfs	HM = 0.22 cfs = 0.14212 mgd

* Will Be Assumed At Low Drainage Area Rt

cfs × [illegible] = mgd

Attachment 1

The high flow months are November through April. This analysis assumes there are no significant discharges, withdrawals or springs influencing the flow in the Northeast Creek upstream of the discharge point.

If there are any questions concerning this analysis, please let me know.

ATTACHMENT 2

NPDES Permit Rating Worksheet

VA0058891

NPDES PERMIT RATING WORK SHEET

[X] Regular Addition
[ ] Discretionary Addition
[ ] Score change, but no status Change
[ ] Deletion

VPDES NO. : VA0058891

Facility Name: Northeast Creek Water Treatment Plant
City / County: Louisa County
Receiving Water: Northeast Creek
Waterbody ID: VAN-F02R

Is this facility a steam electric power plant (sic =4911) with one or more of the following characteristics?

1. Power output 500 MW or greater (not using a cooling pond/lake)
2. A nuclear power Plant
3. Cooling water discharge greater than 25% of the receiving stream's 7Q10 flow rater

[ ] Yes; score is 600 (stop here) [X] NO; (continue)

Is this permit for a municipal separate storm sewer serving a population greater than 100,000?

[ ] YES; score is 700 (stop here)
[X] NO; (continue)

FACTOR 1: Toxic Pollutant Potential

PCS SIC Code: _____ Primary Sic Code: **4941** Other Sic Codes: _____ _____ _____

Industrial Subcategory Code: 000 (Code 000 if no subcategory)

Determine the Toxicity potential from Appendix A. Be sure to use the TOTAL toxicity potential column and check one)

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
[ ] No process waste streams	0	0	[ ] 3.	3	15	[X] 7.	7	35
[ ] 1.	1	5	[ ] 4.	4	20	[ ] 8.	8	40
[ ] 2.	2	10	[ ] 5.	5	25	[ ] 9.	9	45
			[ ] 6.	6	30	[ ] 10.	10	50

Code Number Checked: 7

Total Points Factor 1: 35

FACTOR 2: Flow/Stream Flow Volume (Complete either Section A or Section B; check only one)

Section A – Wastewater Flow Only considered

Wastewater Type (see Instructions)			Code	Points
Type I:	Flow < 5 MGD	[ ]	11	0
	Flow 5 to 10 MGD	[ ]	12	10
	Flow > 10 to 50 MGD	[ ]	13	20
	Flow > 50 MGD	[ ]	14	30
Type II:	Flow < 1 MGD	[ ]	21	10
	Flow 1 to 5 MGD	[ ]	22	20
	Flow > 5 to 10 MGD	[ ]	23	30
	Flow > 10 MGD	[ ]	24	50
Type III:	Flow < 1 MGD	[ ]	31	0
	Flow 1 to 5 MGD	[ ]	32	10
	Flow > 5 to 10 MGD	[ ]	33	20
	Flow > 10 MGD	[ ]	34	30

Section B – Wastewater and Stream Flow Considered

Wastewater Type (see Instructions)	Percent of Instream Wastewater Concentration at Receiving Stream Low Flow		Code	Points
Type I/III:	< 10 %	[ ]	41	0
	10 % to < 50 %	[ ]	42	10
	> 50%	[ ]	43	20
Type II:	< 10 %	[ ]	51	0
	10 % to < 50 %	[ ]	52	20
	> 50 %	[X]	53	30

Code Checked from Section A or B: 53

Total Points Factor 2: 30

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NPDES PERMIT RATING WORK SHEET

FACTOR 3: Conventional Pollutants

(only when limited by the permit)

A. Oxygen Demanding Pollutants: (check one) ☐ BOD ☐ COD ☐ Other: _____

Permit Limits: (check one)	Code	Points
☐ < 100 lbs/day	1	0
☐ 100 to 1000 lbs/day	2	5
☐ > 1000 to 3000 lbs/day	3	15
☐ > 3000 lbs/day	4	20

Code Number Checked: NA

Points Scored: 0

B. Total Suspended Solids (TSS)

Permit Limits: (check one)	Code	Points
☒ < 100 lbs/day	1	0
☐ 100 to 1000 lbs/day	2	5
☐ > 1000 to 5000 lbs/day	3	15
☐ > 5000 lbs/day	4	20

Code Number Checked: 1

Points Scored: 0

C. Nitrogen Pollutants: (check one) ☐ Ammonia ☐ Other: _____

Permit Limits: (check one) *Nitrogen Equivalent*	Code	Points
☐ < 300 lbs/day	1	0
☐ 300 to 1000 lbs/day	2	5
☐ > 1000 to 3000 lbs/day	3	15
☐ > 3000 lbs/day	4	20

Code Number Checked: NA

Points Scored: 0

Total Points Factor 3: 0

FACTOR 4: Public Health Impact

Is there a public drinking water supply located within 50 miles downstream of the effluent discharge (this include any body of water to which the receiving water is a tributary)? A public drinking water supply may include infiltration galleries, or other methods of conveyance that ultimately get water from the above reference supply.

☐ YES; (If yes, check toxicity potential number below)

☒ NO; (If no, go to Factor 5)

Determine the *Human Health* potential from Appendix A. Use the same SIC doe and subcategory reference as in Factor 1. (Be sure to use the *Human Health* toxicity group column – check one below)

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
☐ No process waste streams	0	0	☐ 3.	3	0	☐ 7.	7	15
☐ 1.	1	0	☐ 4.	4	0	☐ 8.	8	20
☐ 2.	2	0	☐ 5.	5	5	☐ 9.	9	25
			☐ 6.	6	10	☐ 10.	10	30

Code Number Checked: NA

Total Points Factor 4: 0

VA0058891

NPDES PERMIT RATING WORK SHEET

FACTOR 5: Water Quality Factors

A. *Is (or will) one or more of the effluent discharge limits based on water quality factors of the receiving stream (rather than technology-base federal effluent guidelines, or technology-base state effluent guidelines), or has a wasteload allocation been assigned to the discharge?*

		Code	Points
[ ]	YES	1	10
[X]	NO	2	0

B. *Is the receiving water in compliance with applicable water quality standards for pollutants that are water quality limited in the permit?*

		Code	Points
[X]	YES	1	0
[ ]	NO	2	5

C. *Does the effluent discharged from this facility exhibit the reasonable potential to violate water quality standards due to whole effluent toxicity?*

		Code	Points
[ ]	YES	1	10
[X]	NO	2	0

Code Number Checked: A 2 B 1 C 2

Points Factor 5: A 0 + B 0 + C 0 = **0**

FACTOR 6: Proximity to Near Coastal Waters

A. Base Score: Enter flow code here (from factor 2) 53

Check appropriate facility HPRI code (from PCS):

	HPRI#	Code	HPRI Score
[ ]	1	1	20
[ ]	2	2	0
[ ]	3	3	30
[X]	4	4	0
[ ]	5	5	20

Enter the multiplication factor that corresponds to the flow code: 0.60

Flow Code	Multiplication Factor
11, 31, or 41	0.00
12, 32, or 42	0.05
13, 33, or 43	0.10
14 or 34	0.15
21 or 51	0.10
22 or 52	0.30
23 or 53	0.60
24	1.00

HPRI code checked : 4

Base Score (HPRI Score): 0 X (Multiplication Factor) 0.60 = 0

B. Additional Points – NEP Program

For a facility that has an HPRI code of 3, does the facility discharge to one of the estuaries enrolled in the National Estuary Protection (NEP) program (see instructions) or the Chesapeake Bay?

	Code	Points
[ ]	1	10
[X]	2	0

C. Additional Points – Great Lakes Area of Concern

For a facility that has an HPRI code of 5, does the facility discharge any of the pollutants of concern into one of the Great Lakes' 31 area's of concern (see instructions)?

	Code	Points
[ ]	1	10
[X]	2	0

Code Number Checked: A 4 B 2 C 2

Points Factor 6: A 0 + B 0 + C 0 = **0**

VA0058891

NPDES PERMIT RATING WORK SHEET

SCORE SUMMARY

Factor	Description	Total Points
1	Toxic Pollutant Potential	35
2	Flows / Streamflow Volume	30
3	Conventional Pollutants	0
4	Public Health Impacts	0
5	Water Quality Factors	0
6	Proximity to Near Coastal Waters	0
	TOTAL (Factors 1 through 6)	65

S1. Is the total score equal to or grater than 80 ☐ YES; (Facility is a Major) ☒ NO

S2. If the answer to the above questions is no, would you like this facility to be discretionary major?

☒ NO

☐ YES; (Add 500 points to the above score and provide reason below:

Reason: _____

NEW SCORE : 65

OLD SCORE : 65

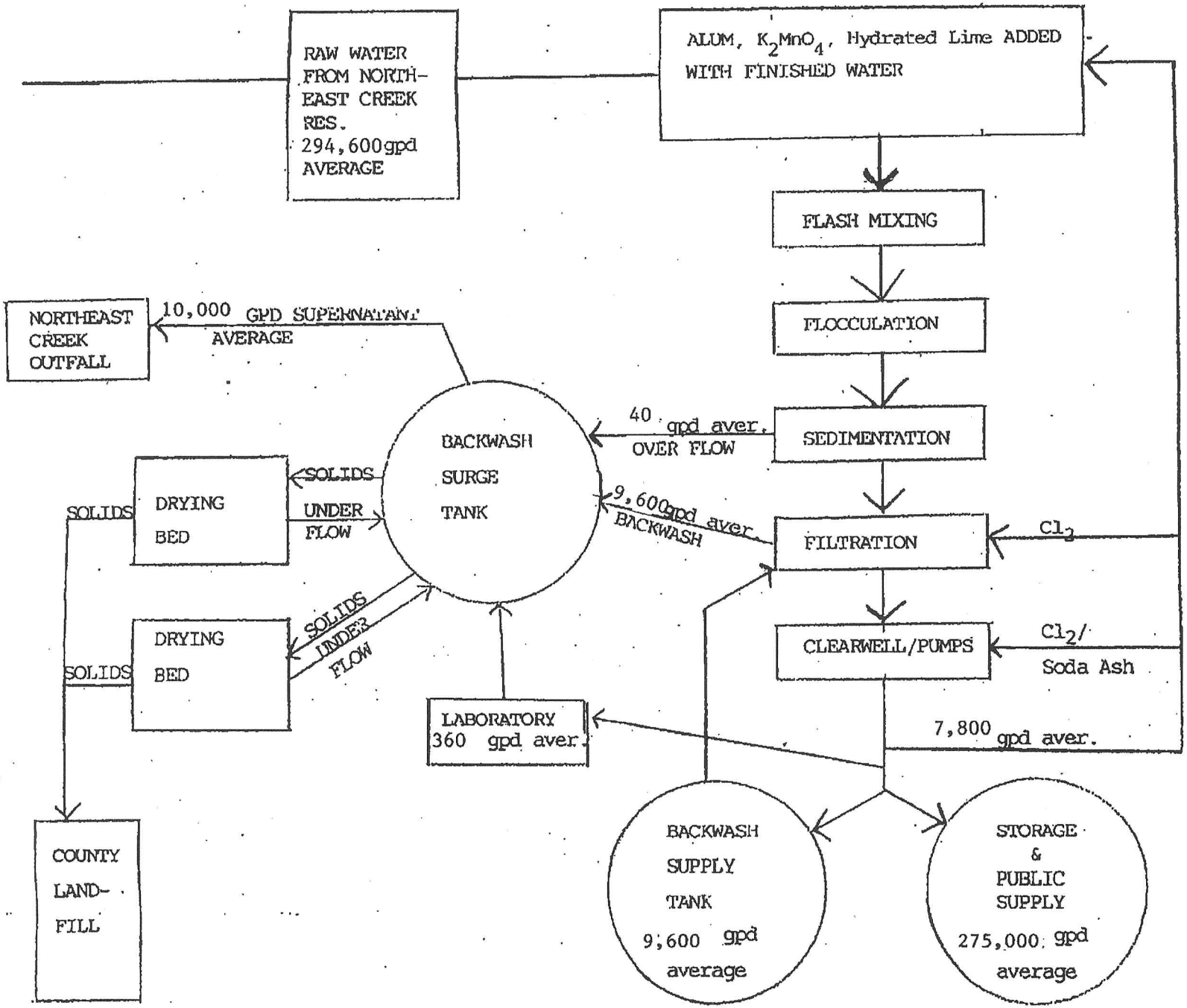
Permit Reviewer's Name : Douglas Frasier

Phone Number: 703-583-3873

Date: 19 August 2014

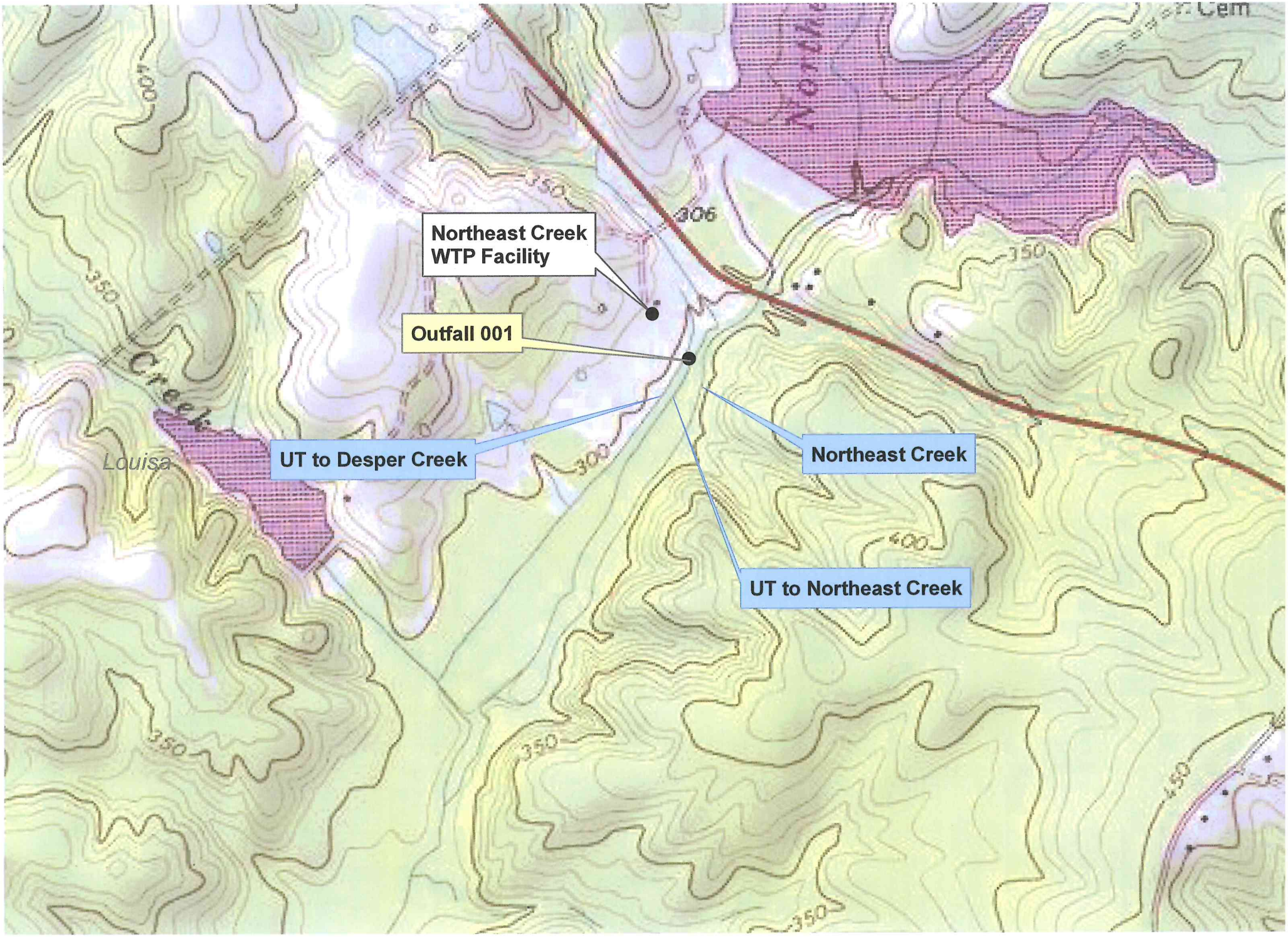
ATTACHMENT 3

Facility Schematic/Diagram


RAW WATER FROM NORTH-EAST CREEK RES. 294,600gpd AVERAGE
ALUM, K_2MnO_4, Hydrated Lime ADDED WITH FINISHED WATER
FLASH MIXING
FLOCCULATION
SEDIMENTATION
FILTRATION
CLEARWELL/PUMPS
Cl_2
Cl_2/ Soda Ash
7,800 gpd aver.
NORTHEAST CREEK OUTFALL
10,000 GPD SUPERNATANT AVERAGE
BACKWASH SURGE TANK
40 gpd aver. OVER FLOW
9,600gpd aver. BACKWASH
SOLIDS UNDER FLOW
DRYING BED
SOLIDS
DRYING BED
SOLIDS
SOLIDS UNDER FLOW
LABORATORY 360 gpd aver.
COUNTY LAND-FILL
BACKWASH SUPPLY TANK 9,600 gpd average
STORAGE & PUBLIC SUPPLY 275,000 gpd average

ATTACHMENT 4

Topographic Map


Northeast Creek
WTP Facility
Outfall 001
UT to Desper Creek
Northeast Creek
UT to Northeast Creek
Louisa
Creek
350
306
300
400
450

ATTACHMENT 5

Site Inspection Report

DEQ
WASTEWATER FACILITY INSPECTION REPORT
PREFACE

VPDES/State Certification No.	(RE) Issuance Date	Amendment Date	Expiration Date
VA0058891	**December 28, 2004**		**December 27, 2009**

Facility Name	Address	Telephone Number
Northeast Creek Water Treatment Plant	**3380 Jefferson Highway Louisa, VA, 23903**	**540-967-0521**
Owner Name	Address	Telephone Number
Louisa County Water Authority	**P.O. Box 9, Louisa VA 23093**	**(540) 967-1122**
Responsible Official	Title	Telephone Number
Bar Delk	**General Manager**	**(540) 967-1122**
Responsible Operator	Operator Cert. Class/number	Telephone Number
Warren Hunter Martin	**NA**	**540-967-0521**

TYPE OF FACILITY:

DOMESTIC				**INDUSTRIAL**			
Federal		Major		Major		Primary	
Non-federal		Minor		Minor	**X**	Secondary	**X**

INFLUENT CHARACTERISTICS:	DESIGN:
Flow	**0.050 MGD**
Population Served	**NA**
Connections Served	**NA**
BOD_5	**NA**
TSS	**NA**

EFFLUENT LIMITS: SPECIFY UNITS

Parameter	Min.	Avg.	Max.	Parameter	Min.	Avg.	Max.
Flow, MGD		**NL**	**NL**	**pH, s.u.**	**6.0**		**9.0**
Total Suspended Solids, mg/L		**30**	**60**	**TCL2, mg/L**		**0.019**	**0.019**

Receiving Stream	**Northeast Creek**
Basin	**York River**
Discharge Point (LAT)	**37° 58′ 36″**
Discharge Point (LONG)	**77° 56′ 27″**

Note: The design flow is based on the long term average discharge that has been reported in the permit reissuance application.

VPDES NO. **VA0058891**

REV 5/00

DEQ
WASTEWATER FACILITY
INSPECTION REPORT
PART 1

Inspection date: **January 10, 2008**

Date form completed: **January 25, 2008**

Inspection by: **Sharon Mack**

Inspection agency: **DEQ NRO**

Time spent: **20 hours**

Announced: **No**

Reviewed by:

Scheduled: **Yes**

Present at inspection: **Hunter Martin, Phillip Bailey- LCWA**

TYPE OF FACILITY:

	Domestic	**Industrial**	
[ ] Federal	[ ] Major	[ ] Major	[ ] Primary
[ ] Nonfederal	[ ] Minor	[**X**] Minor	[**X**] Secondary

Type of inspection:

[**X**] Routine
[ ] Compliance/Assistance/Complaint
[ ] Reinspection

Date of last inspection: **06/03/1999**
Agency: **DEQ VRO**

Population served: **NA**

Connections served: **NA**

Last month average: (Effluent) **November 2007:**

Flow:	**0.049**	MGD	pH:	**6.5**	s.u.	TSS	**1.8**	mg/L
CL_2, Inst Res Max	**<QL**	mg/L						

Quarter average: (Effluent) September, **October, November 2007**

Flow:	**0.045**	MGD	pH:	**6.5**	s.u.	TSS	**2.3**	mg/L
CL_2, Inst Res Max	**<QL**	mg/L						

DATA VERIFIED IN PREFACE [**X**] Updated [ ] No changes

Has there been any new construction? [ ] Yes [**X**] No

If yes, were plans and specifications approved? [ ] Yes [ ] No [**X**] NA

DEQ approval date: **NA**

(A) PLANT OPERATION AND MAINTENANCE

1. Class and number of licensed operators: **See Comments**

2. Hours per day plant is manned: **~ 7.5 hours per day, 7 days per week. Varies with water demand.**

3. Describe adequacy of staffing. [**X**] Good [ ] Average [ ] Poor

4. Does the plant have an established program for training personnel? [**X**] Yes [ ] No

5. Describe the adequacy of the training program. [ ] Good [**X**] Average [ ] Poor

6. Are preventive maintenance tasks scheduled? [**X**] Yes [ ] No

7. Describe the adequacy of maintenance. [**X**] Good [ ] Average [ ] Poor*

8. Does the plant experience any organic/hydraulic overloading?
   If yes, identify cause and impact on plant: [ ] Yes [**X**] No

9. Any bypassing since last inspection? [ ] Yes [**X**] No

10. Is the standby electric generator operational? [ ] Yes [ ] No* [**X**] NA

11. Is the STP alarm system operational? [ ] Yes [ ] No* [**X**] NA

12. How often is the standby generator exercised? **NA**
    Power Transfer Switch? **NA**
    Alarm System? **NA**

13. When was the cross connection control device last tested on the potable water service? **NA**

14. Is sludge being disposed in accordance with the approved sludge disposal plan?
    [ ] Yes [ ] No [**X**] NA

15. Is septage received by the facility? [ ] Yes [**X**] No
    Is septage loading controlled? [ ] Yes [ ] No [**X**] NA
    Are records maintained? [ ] Yes [ ] No [**X**] NA

16. Overall appearance of facility: [**X**] Good [ ] Average [ ] Poor

Comments:

1. No minimum Wastewater Operator requirement for this facility.

Hunter Martin – Class I Water, 1901000729; no Wastewater
Phillip Bailey – Class II Water 1902000976
Class III Wastewater 1911002656
Nancy Pugh – Class I Wastewater, 1909001709
Class II Water, 1902001645

10. The facility does not currently have a generator, but one has been purchased and will be installed soon. Wastewater treatment is not dependant on electric power.

13. Backwash water is finished water but does not come from the pubic water supply; it is stored on site in a separate tank reserved for filter backwashing only.

(B) PLANT RECORDS

1. Which of the following records does the plant maintain?

Operational Logs for each unit process	[X] Yes	[ ] No	[ ] NA
Instrument maintenance and calibration	[X] Yes	[ ] No	[ ] NA
Mechanical equipment maintenance	[X] Yes	[ ] No	[ ] NA
Industrial waste contribution (Municipal Facilities)	[ ] Yes	[ ] No	[X] NA

2. What does the operational log contain?

[X] Visual observations
[X] Laboratory results
[ ] Control calculations
[X] Flow measurement
[X] Process adjustments
[ ] Other (specify)

Comments:

3. What do the mechanical equipment records contain?

[X] As built plans and specs
[X] Manufacturers instructions
[ ] Lubrication schedules
[ ] Spare parts inventory
[X] Equipment/parts suppliers
[ ] Other (specify)

Comments:

4. What do the industrial waste contribution records contain? **NA**
(Municipal Only)

[ ] Waste characteristics
[ ] Impact on plant
[ ] Locations and discharge types
[ ] Other (specify)

Comments:

5. Which of the following records are kept at the plant and available to personnel?

[X] Equipment maintenance records
[ ] Industrial contributor records
[X] Sampling and testing records
[X] Operational Log
[X] Instrumentation records

6. Records not normally available to plant personnel and their location: **None**

7. Were the records reviewed during the inspection? [X] Yes [ ] No

8. Are the records adequate and the O & M Manual current? [X] Yes [ ] No

9. Are the records maintained for the required 3-year time period? [X] Yes [ ] No

Comments:

9. Records are kept in plant 3 years- older kept in storage building (back to late 80's)

(C) SAMPLING

1. Do sampling locations appear to be capable of providing representative samples? [**X**] Yes [ ] No*
2. Do sample types correspond to those required by the VPDES permit? [**X**] Yes [ ] No*
3. Do sampling frequencies correspond to those required by the VPDES permit? [**X**] Yes [ ] No*
4. Are composite samples collected in proportion to flow? [ ] Yes [**X**] No* [ ] NA
5. Are composite samples refrigerated during collection? [**X**] Yes [ ] No* [ ] NA
6. Does plant maintain required records of sampling? [**X**] Yes [ ] No*
7. Does plant run operational control tests? [**X**] Yes [ ] No

Comments:

4. The permit requires a composite sample for Total Suspended Solids once per month- sample is to be collected as five grab samples over 8 hours (or the duration of the discharge).

(D) TESTING

1. Who performs the testing? [**X**] Plant [**X**] Central Lab [ ] Commercial Lab

Name: **Plant- pH, TRC, flow**
Louisa Regional STP - TSS

If plant performs any testing, complete 2-4.

2. What method is used for chlorine analysis? **DPD- Spectrophotometer**
3. Does plant appear to have sufficient equipment to perform required tests? [**X**] Yes [ ] No*
4. Does testing equipment appear to be clean and/or operable? [**X**] Yes [ ] No*

Comments:

(E) FOR INDUSTRIAL FACILITIES WITH TECHNOLOGY BASED LIMITS ONLY

1. Is the production process as described in the permit application? (If no, describe changes in comments)
[ ] Yes [ ] No [**X**] NA
2. Do products and production rates correspond as provided in the permit application? (If no, list differences)
[ ] Yes [ ] No [**X**] NA
3. Has the State been notified of the changes and their impact on plant effluent? Date:
[ ] Yes [ ] No* [**X**] NA

Comments:

(E) The EPA has not promulgated technology -based limits for water treatment plants. In the absence of any national standards for water treatment plants, the Virginia Department of Environmental Quality has developed technology -based limits based on Best Professional Judgment (BPJ). Total Suspended Solids limits in the permit are based on BPJ- other limits are water quality based.

SUMMARY

Process Summary

The Northeast Creek WTP is a potable water plant producing drinking water for The Town of Louisa, the Town of Mineral and rural customers of Louisa County. The facility withdraws water from the Northeast Creek Reservoir.

The treatment process consists of the following: chemical addition & coagulation in two contact basins, two rapid mixers, two slow mixing flocculating chambers, two sedimentation basins, two dual media filters, and a clear well before final distribution.

Filter backwash water, re-wash water from the filters, water and sediment from clarifier cleaning, and water from the drying bed drain system is sent to the backwash surge tank, which discharges to Northeast Creek about ½ mile below the reservoir. A schematic from the O&M Manual is attached to this report.

The filters are backwashed with finished, chlorinated water that is stored on site in the backwash tank. The staff monitories how much water is used for each filter via the drop in the backwash tank's water level; calculate the gallons per filter, and add these numbers together to estimate water sent to surge tank. The number is slightly inflated to account for side flows to the tank.

The clarifiers are each cleaned twice a year – one clarifier is cleaned at a time. Approximately 680 gallons of water and sediment per cleaning event are drained to surge tank.

The water is left in the backwash surge tank for two-four days so the solids settle and total residual chlorine (TRC) dissipates. Sediment in the surge tank is pumped to the sand drying beds. When dry, it is hauled to the Louisa County Sanitary Landfill. The water is discharged to Northeast creek through Outfall 001 using an electric pump that is operated manually. In the summer, the facility discharges 3-4 times per month; in the winter, 5-7 times per month. A grab sample for process control monitoring is collected from tank and analyzed for pH and TRC in order to assure that the water meets permit limits before it is pumped to the creek. Compliance samples are collected at Outfall 001. TRC and pH are analyzed on site. A 2000 ml sample for Total Suspended Solids (TSS) analysis is collected as a manual composite, stored on site in a sample refrigerator, and taken to Louisa Regional Wastewater Treatment Plant (WWTP) for analysis.

Recommendations for action:

- **The facility is well kept and records are thorough. However, the EPA's new laboratory methods rule published in the Federal Register in March 2007 have changed QA/QC requirements for analyses run by the plant's staff. Review the laboratory inspection report thoroughly.**
- **A chain of custody form should be developed to track the TSS compliance sample from collection to delivery at Louisa Regional WWTP in order to document proper handling and hold times.**
- **It appears that the black sediment below the discharge pipe in photo #5 may be solids from the backwash tank. While the compliance analyses show TSS levels well below the permit limits, I speculate that solids in the backwash surge tank could easily be stirred up by the electric pump as the water level in the tank gets low, which could lead to a significant increase in solids concentrations in the water toward the end of the discharge period. Investigate whether the TSS concentration does increase near the end of the discharge period and, if so, establish a policy to prevent this from occurring.**

VPDES NO. **VA0058891**

UNIT PROCESS: Sedimentation
Backwash Surge Tank

[**X**] Primary [ ] Secondary [ ] Tertiary

1.	Number of units: **1**	In operation: **1**		
2.	Proper flow distribution between units:	[ ] Yes	[ ] No*	[**X**] NA
3.	Signs of short circuiting and/or overloads:	[ ] Yes	[**X**] No	
4.	Effluent weirs level:	[ ] Yes	[ ] No*	[**X**] NA
	Clean:	[ ] Yes	[ ] No*	[**X**] NA
5.	Scum collection system working properly:	[ ] Yes	[ ] No*	[**X**] NA
6.	Sludge collection system working properly:	[ ] Yes	[ ] No*	[**X**] NA
7.	Influent, effluent baffle systems working properly:	[ ] Yes	[ ] No*	[**X**] NA
8.	Chemical addition: **See comments**			
	Chemicals:			
9.	Effluent characteristics: **No discharge at time of inspection**			
10.	General condition:	[**X**] Good	[ ] Fair	[ ] Poor

Comments:

8, 9) Sodium bisulfite is occasionally added manually in winter if deemed necessary to remove chlorine.

VPDES NO. **VA0058891**

UNIT PROCESS: Effluent/Plant Outfall

1.	Type Outfall	[**X**] Shore based	[ ] Submerged	
2.	Type if shore based:	[ ] Wingwall	[**X**] Headwall	[ ] Rip Rap
3.	Flapper valve:	[**X**] Yes [ ] No	[ ] NA	
4.	Erosion of bank:	[ ] Yes [**X**] No	[ ] NA	
5.	Effluent plume visible?	[ ] Yes* [**X**] No	**No discharge**	
6.	Condition of outfall and supporting structures:		[**X**] Good	[ ] Fair [ ] Poor*
7.	Final effluent, evidence of following problems:		**No discharge**	
	a. oil sheen	[ ] Yes* [ ] No		
	b. grease	[ ] Yes* [ ] No		
	c. sludge bar	[ ] Yes* [ ] No		
	d. turbid effluent	[ ] Yes* [ ] No		
	e. visible foam	[ ] Yes* [ ] No		
	f. unusual color	[ ] Yes* [ ] No		

Comments:

VPDES NO. **VA0058891**

UNIT PROCESS: Drying Beds

1. Number of units: **2** In operation: **2**
2. Cover in good condition: [ ] Yes [ ] No* [**X**] NA
3. Typical sand depth in beds: **12 inches**
4. Typical drying time: **~ 60 days depending on weather**
5. Frequency of usage: **Four times per year.**
6. Underflow recycle location: **Backwash surge tank**
7. Sludge distributed evenly across bed(s): [**X**] Yes [ ] No*
8. Following problems noted:

a. odors	[ ] Yes*	[**X**] No
b. flies	[ ] Yes*	[**X**] No
c. weed growth	[ ] Yes*	[**X**] No
d. leakage from bed(s)	[ ] Yes*	[**X**] No

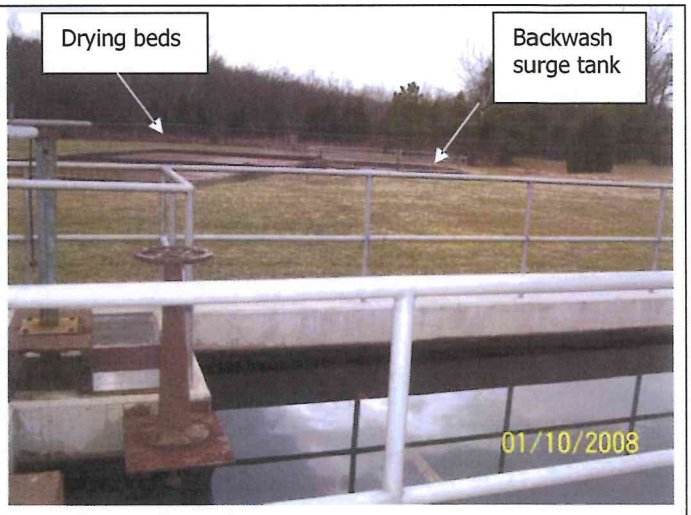
9. If the facility does not have an approved sludge plan, what is the current method of sludge disposal?
Solids from surge tank and clarifiers are pumped to drying beds, when dry they are is hauled to the Louisa County Sanitary Landfill.

10. General condition: [**X**] Good [ ] Fair [ ] Poor

Comments:

3. The drying beds layers are composed of:
12 inches sand
3 inches #12 stone
3 inches #9 stone
3 inches #4 stone
over 4 inch drain tiles.

1) Water treatment – clarifiers and treatment building.



2) Water treatment- clarifier and sand beds.

3) Water treatment – filters.

4) Backwash water surge tank.

Facility name: Northeast Creek WTP
Site Inspection Date: January 10, 2008

VPDES Permit No. VA0058891
Photos & Layout by: Sharon Mack

5) Outfall 001.

6) Northeast Creek- downstream of 001.

7) Northeast Creek- upstream from 001.

Facility name: Northeast Creek WTP
Site Inspection Date: January 10, 2008

VPDES Permit No. VA0058891
Photos & Layout by: Sharon Mack

ATTACHMENT 6

Planning Statement

To:	Douglas Frasier
From:	Rebecca Shoemaker
Date:	06 August 2014
Subject:	Planning Statement for Northeast Creek Water Treatment Plant
Permit Number:	VA0058891

Information for Outfall 001:

Discharge Type:	minor, industrial
Discharge Flow:	0.05 MGD
Receiving Stream:	Northeast Creek
Latitude / Longitude:	37° 58′ 36″ / 77° 56′ 27″
Rivermile:	3.64
Streamcode:	8-NTH
Waterbody:	VAN-F02R
Water Quality Standards:	Class III, Section 3, No Special Standards
Drainage Area:	10.07 square miles

1. Please provide water quality monitoring information for the receiving stream segment. If there is not monitoring information for the receiving stream segment, please provide information on the nearest downstream monitoring station, including how far downstream the monitoring station is from the outfall.

   This facility discharges to Northeast Creek. DEQ Fish Tissue Monitoring Station 8-NTH004.05 is located within Northeast Creek Reservoir, approximately 0.40 mile upstream from Outfall 001. DEQ ambient station 8-NTH001.02 is located on Northeast Creek at Route 644, approximately 2.60 miles downstream from Outfall 001.

   The following is the water quality summary for this segment of Northeast Creek, as taken from the 2012 Integrated Report:

   DEQ monitoring stations located in this segment of Northeast Creek:
   - *DEQ ambient monitoring station 8-NTH001.02, at Route 644*

   The aquatic life, recreation and wildlife uses are considered fully supporting. The fish consumption use was not assessed.

2. Does this facility discharge to a stream segment on the 303(d) list? If yes, please fill out Table A.

   No.

3. Are there any downstream 303(d) listed impairments that are relevant to this discharge? If yes, please fill out Table B.

Yes.

Table B. Information on Downstream 303(d) Impairments and TMDLs

Waterbody Name	Impaired Use	Cause	Distance From Outfall	TMDL completed	WLA	Basis for WLA	TMDL Schedule
Impairment Information in the 2012 Integrated Report							
South Anna River	Recreation	*E. coli*	3.64 miles	Pamunkey River Basin Bacteria 8/2/2006	None (not expected to discharge pollutant)	----	----

4. Is there monitoring or other conditions that Planning/Assessment needs in the permit?

There is a completed downstream TMDL for the aquatic life use impairment for the Chesapeake Bay. However, the Bay TMDL and the WLAs contained within the TMDL are not addressed in this planning statement.

5. Fact Sheet Requirements – Please provide information regarding any drinking water intakes located within a 5 mile radius of the discharge point.

There is one drinking water intake for Louisa County located within a five mile radius of Outfall 001.

ATTACHMENT 7

Water Quality Criteria / Wasteload Allocation Analysis

FRESHWATER
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Northeast Creek WTP Permit No.: VA0058891

Receiving Stream: Northeast Creek Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information		Stream Flows		Mixing Information		Effluent Information	
Mean Hardness (as CaCO3) =	mg/L	1Q10 (Annual) =	0 MGD	Annual - 1Q10 Mix =	%	Mean Hardness (as CaCO3) =	50 mg/L
90% Temperature (Annual) =	deg C	7Q10 (Annual) =	0 MGD	- 7Q10 Mix =	%	90% Temp (Annual) =	25 deg C
90% Temperature (Wet season) =	deg C	30Q10 (Annual) =	0 MGD	- 30Q10 Mix =	%	90% Temp (Wet season) =	15 deg C
90% Maximum pH =	SU	1Q10 (Wet season) =	0 MGD	Wet Season - 1Q10 Mix =	%	90% Maximum pH =	7.4 SU
10% Maximum pH =	SU	30Q10 (Wet season)	0 MGD	- 30Q10 Mix =	%	10% Maximum pH =	6.3 SU
Tier Designation (1 or 2) =	1	30Q5 =	0 MGD			Discharge Flow =	0.05 MGD
Public Water Supply (PWS) Y/N? =	n	Harmonic Mean =	0 MGD				
Trout Present Y/N? =	n						
Early Life Stages Present Y/N? =	y						

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenapthene	0	--	--	na	9.9E+02	--	--	na	9.9E+02	--	--	--	--	--	--	--	--	--	--	na	9.9E+02
Acrolein	0	--	--	na	9.3E+00	--	--	na	9.3E+00	--	--	--	--	--	--	--	--	--	--	na	9.3E+00
Acrylonitrile [C]	0	--	--	na	2.5E+00	--	--	na	2.5E+00	--	--	--	--	--	--	--	--	--	--	na	2.5E+00
Aldrin [C]	0	3.0E+00	--	na	5.0E-04	3.0E+00	--	na	5.0E-04	--	--	--	--	--	--	--	--	3.0E+00	--	na	5.0E-04
Ammonia-N (mg/l) (Yearly)	0	2.30E+01	2.41E+00	na	--	2.30E+01	2.41E+00	na	--	--	--	--	--	--	--	--	--	2.30E+01	2.41E+00	na	--
Ammonia-N (mg/l) (High Flow)	0	2.30E+01	4.59E+00	na	--	2.30E+01	4.59E+00	na	--	--	--	--	--	--	--	--	--	2.30E+01	4.59E+00	na	--
Anthracene	0	--	--	na	4.0E+04	--	--	na	4.0E+04	--	--	--	--	--	--	--	--	--	--	na	4.0E+04
Antimony	0	--	--	na	6.4E+02	--	--	na	6.4E+02	--	--	--	--	--	--	--	--	--	--	na	6.4E+02
Arsenic	o	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	--	--	--	--	--	--	--	--	3.4E+02	1.5E+02	na	--
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Benzene [C]	0	--	--	na	5.1E+02	--	--	na	5.1E+02	--	--	--	--	--	--	--	--	--	--	na	5.1E+02
Benzidine [C]	0	--	--	na	2.0E-03	--	--	na	2.0E-03	--	--	--	--	--	--	--	--	--	--	na	2.0E-03
Benzo (a) anthracene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Benzo (b) fluoranthene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Benzo (k) fluoranthene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Benzo (a) pyrene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Bis2-Chloroethyl Ether [C]	0	--	--	na	5.3E+00	--	--	na	5.3E+00	--	--	--	--	--	--	--	--	--	--	na	5.3E+00
Bis2-Chloroisopropyl Ether	0	--	--	na	6.5E+04	--	--	na	6.5E+04	--	--	--	--	--	--	--	--	--	--	na	6.5E+04
Bis 2-Ethylhexyl Phthalate [C]	0	--	--	na	2.2E+01	--	--	na	2.2E+01	--	--	--	--	--	--	--	--	--	--	na	2.2E+01
Bromoform [C]	0	--	--	na	1.4E+03	--	--	na	1.4E+03	--	--	--	--	--	--	--	--	--	--	na	1.4E+03
Butylbenzylphthalate	0	--	--	na	1.9E+03	--	--	na	1.9E+03	--	--	--	--	--	--	--	--	--	--	na	1.9E+03
Cadmium	0	1.8E+00	6.6E-01	na	--	1.8E+00	6.6E-01	na	--	--	--	--	--	--	--	--	--	1.8E+00	6.6E-01	na	--
Carbon Tetrachloride [C]	0	--	--	na	1.6E+01	--	--	na	1.6E+01	--	--	--	--	--	--	--	--	--	--	na	1.6E+01
Chlordane [C]	0	2.4E+00	4.3E-03	na	8.1E-03	2.4E+00	4.3E-03	na	8.1E-03	--	--	--	--	--	--	--	--	2.4E+00	4.3E-03	na	8.1E-03
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	--	--	--	--	--	--	--	--	8.6E+05	2.3E+05	na	--
TRC	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.9E+01	1.1E+01	na	--
Chlorobenzene	0	--	--	na	1.6E+03	--	--	na	1.6E+03	--	--	--	--	--	--	--	--	--	--	na	1.6E+03

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				**Most Limiting Allocations**			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	**Acute**	**Chronic**	**HH (PWS)**	**HH**
Chlorodibromomethane[C]	0	--	--	na	1.3E+02	--	--	na	1.3E+02	--	--	--	--	--	--	--	--	--	--	na	1.3E+02
Chloroform	0	--	--	na	1.1E+04	--	--	na	1.1E+04	--	--	--	--	--	--	--	--	--	--	na	1.1E+04
2-Chloronaphthalene	0	--	--	na	1.6E+03	--	--	na	1.6E+03	--	--	--	--	--	--	--	--	--	--	na	1.6E+03
2-Chlorophenol	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	--	--	--	--	na	1.5E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	--	--	--	--	8.3E-02	4.1E-02	na	--
Chromium III	0	3.2E+02	4.2E+01	na	--	3.2E+02	4.2E+01	na	--	--	--	--	--	--	--	--	--	3.2E+02	4.2E+01	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.6E+01	1.1E+01	na	--
Chromium, Total	0	--	--	1.0E+02	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene [C]	0	--	--	na	1.8E-02	--	--	na	1.8E-02	--	--	--	--	--	--	--	--	--	--	na	1.8E-02
Copper	0	7.0E+00	5.0E+00	na	--	7.0E+00	5.0E+00	na	--	--	--	--	--	--	--	--	--	7.0E+00	5.0E+00	na	--
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	2.2E+01	5.2E+00	na	1.6E+04	--	--	--	--	--	--	--	--	2.2E+01	5.2E+00	na	1.6E+04
DDD [C]	0	--	--	na	3.1E-03	--	--	na	3.1E-03	--	--	--	--	--	--	--	--	--	--	na	3.1E-03
DDE [C]	0	--	--	na	2.2E-03	--	--	na	2.2E-03	--	--	--	--	--	--	--	--	--	--	na	2.2E-03
DDT [C]	0	1.1E+00	1.0E-03	na	2.2E-03	1.1E+00	1.0E-03	na	2.2E-03	--	--	--	--	--	--	--	--	1.1E+00	1.0E-03	na	2.2E-03
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Diazinon	0	1.7E-01	1.7E-01	na	--	1.7E-01	1.7E-01	na	--	--	--	--	--	--	--	--	--	1.7E-01	1.7E-01	na	--
Dibenz(a,h)anthracene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
1,2-Dichlorobenzene	0	--	--	na	1.3E+03	--	--	na	1.3E+03	--	--	--	--	--	--	--	--	--	--	na	1.3E+03
1,3-Dichlorobenzene	0	--	--	na	9.6E+02	--	--	na	9.6E+02	--	--	--	--	--	--	--	--	--	--	na	9.6E+02
1,4-Dichlorobenzene	0	--	--	na	1.9E+02	--	--	na	1.9E+02	--	--	--	--	--	--	--	--	--	--	na	1.9E+02
3,3-Dichlorobenzidine[C]	0	--	--	na	2.8E-01	--	--	na	2.8E-01	--	--	--	--	--	--	--	--	--	--	na	2.8E-01
Dichlorobromomethane [C]	0	--	--	na	1.7E+02	--	--	na	1.7E+02	--	--	--	--	--	--	--	--	--	--	na	1.7E+02
1,2-Dichloroethane [C]	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	--	--	--	--	--	--	--	--	na	3.7E+02
1,1-Dichloroethylene	0	--	--	na	7.1E+03	--	--	na	7.1E+03	--	--	--	--	--	--	--	--	--	--	na	7.1E+03
1,2-trans-dichloroethylene	0	--	--	na	1.0E+04	--	--	na	1.0E+04	--	--	--	--	--	--	--	--	--	--	na	1.0E+04
2,4-Dichlorophenol	0	--	--	na	2.9E+02	--	--	na	2.9E+02	--	--	--	--	--	--	--	--	--	--	na	2.9E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane[C]	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	--	--	--	--	na	1.5E+02
1,3-Dichloropropene [C]	0	--	--	na	2.1E+02	--	--	na	2.1E+02	--	--	--	--	--	--	--	--	--	--	na	2.1E+02
Dieldrin [C]	0	2.4E-01	5.6E-02	na	5.4E-04	2.4E-01	5.6E-02	na	5.4E-04	--	--	--	--	--	--	--	--	2.4E-01	5.6E-02	na	5.4E-04
Diethyl Phthalate	0	--	--	na	4.4E+04	--	--	na	4.4E+04	--	--	--	--	--	--	--	--	--	--	na	4.4E+04
2,4-Dimethylphenol	0	--	--	na	8.5E+02	--	--	na	8.5E+02	--	--	--	--	--	--	--	--	--	--	na	8.5E+02
Dimethyl Phthalate	0	--	--	na	1.1E+06	--	--	na	1.1E+06	--	--	--	--	--	--	--	--	--	--	na	1.1E+06
Di-n-Butyl Phthalate	0	--	--	na	4.5E+03	--	--	na	4.5E+03	--	--	--	--	--	--	--	--	--	--	na	4.5E+03
2,4 Dinitrophenol	0	--	--	na	5.3E+03	--	--	na	5.3E+03	--	--	--	--	--	--	--	--	--	--	na	5.3E+03
2-Methyl-4,6-Dinitrophenol	0	--	--	na	2.8E+02	--	--	na	2.8E+02	--	--	--	--	--	--	--	--	--	--	na	2.8E+02
2,4-Dinitrotoluene [C]	0	--	--	na	3.4E+01	--	--	na	3.4E+01	--	--	--	--	--	--	--	--	--	--	na	3.4E+01
Dioxin 2,3,7,8-tetrachlorodibenzo-p-dioxin	0	--	--	na	5.1E-08	--	--	na	5.1E-08	--	--	--	--	--	--	--	--	--	--	na	5.1E-08
1,2-Diphenylhydrazine[C]	0	--	--	na	2.0E+00	--	--	na	2.0E+00	--	--	--	--	--	--	--	--	--	--	na	2.0E+00
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	8.9E+01
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	8.9E+01
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	--	--	2.2E-01	5.6E-02	--	--	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	--	--
Endosulfan Sulfate	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Endrin	0	8.6E-02	3.6E-02	na	6.0E-02	8.6E-02	3.6E-02	na	6.0E-02	--	--	--	--	--	--	--	--	8.6E-02	3.6E-02	na	6.0E-02
Endrin Aldehyde	0	--	--	na	3.0E-01	--	--	na	3.0E-01	--	--	--	--	--	--	--	--	--	--	na	3.0E-01

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.1E+03	--	--	na	2.1E+03	--	--	--	--	--	--	--	--	--	--	na	2.1E+03
Fluoranthene	0	--	--	na	1.4E+02	--	--	na	1.4E+02	--	--	--	--	--	--	--	--	--	--	na	1.4E+02
Fluorene	0	--	--	na	5.3E+03	--	--	na	5.3E+03	--	--	--	--	--	--	--	--	--	--	na	5.3E+03
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	--	--	--	--	--	--	--	--	1.0E-02	na	--
Heptachlor [c]	0	5.2E-01	3.8E-03	na	7.9E-04	5.2E-01	3.8E-03	na	7.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	7.9E-04
Heptachlor Epoxide[c]	0	5.2E-01	3.8E-03	na	3.9E-04	5.2E-01	3.8E-03	na	3.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	3.9E-04
Hexachlorobenzene[c]	0	--	--	na	2.9E-03	--	--	na	2.9E-03	--	--	--	--	--	--	--	--	--	--	na	2.9E-03
Hexachlorobutadiene[c]	0	--	--	na	1.8E+02	--	--	na	1.8E+02	--	--	--	--	--	--	--	--	--	--	na	1.8E+02
Hexachlorocyclohexane Alpha-BHC[c]	0	--	--	na	4.9E-02	--	--	na	4.9E-02	--	--	--	--	--	--	--	--	--	--	na	4.9E-02
Hexachlorocyclohexane Beta-BHC[c]	0	--	--	na	1.7E-01	--	--	na	1.7E-01	--	--	--	--	--	--	--	--	--	--	na	1.7E-01
Hexachlorocyclohexane Gamma-BHC[c] (Lindane)	0	9.5E-01	na	na	1.8E+00	9.5E-01	--	na	1.8E+00	--	--	--	--	--	--	--	--	9.5E-01	--	na	1.8E+00
Hexachlorocyclopentadiene	0	--	--	na	1.1E+03	--	--	na	1.1E+03	--	--	--	--	--	--	--	--	--	--	na	1.1E+03
Hexachloroethane[c]	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	--	--	--	na	3.3E+01
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	--	--	--	--	--	--	--	--	2.0E+00	na	--
Indeno (1,2,3-cd) pyrene [c]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone[c]	0	--	--	na	9.6E+03	--	--	na	9.6E+03	--	--	--	--	--	--	--	--	--	--	na	9.6E+03
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	4.9E+01	5.6E+00	na	--	4.9E+01	5.6E+00	na	--	--	--	--	--	--	--	--	--	4.9E+01	5.6E+00	na	--
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	- -	- -	1.4E+00	7.7E-01	- -	- -	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	- -	- -
Methyl Bromide	0	--	--	na	1.5E+03	--	--	na	1.5E+03	--	--	--	--	--	--	--	--	--	--	na	1.5E+03
Methylene Chloride [c]	0	--	--	na	5.9E+03	--	--	na	5.9E+03	--	--	--	--	--	--	--	--	--	--	na	5.9E+03
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	--	--	--	--	--	--	--	--	3.0E-02	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Nickel	0	1.0E+02	1.1E+01	na	4.6E+03	1.0E+02	1.1E+01	na	4.6E+03	--	--	--	--	--	--	--	--	1.0E+02	1.1E+01	na	4.6E+03
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	6.9E+02	--	--	na	6.9E+02	--	--	--	--	--	--	--	--	--	--	na	6.9E+02
N-Nitrosodimethylamine[c]	0	--	--	na	3.0E+01	--	--	na	3.0E+01	--	--	--	--	--	--	--	--	--	--	na	3.0E+01
N-Nitrosodiphenylamine[c]	0	--	--	na	6.0E+01	--	--	na	6.0E+01	--	--	--	--	--	--	--	--	--	--	na	6.0E+01
N-Nitrosodi-n-propylamine[c]	0	--	--	na	5.1E+00	--	--	na	5.1E+00	--	--	--	--	--	--	--	--	--	--	na	5.1E+00
Nonylphenol	0	2.8E+01	6.6E+00	--	--	2.8E+01	6.6E+00	na	--	--	--	--	--	--	--	--	--	2.8E+01	6.6E+00	na	--
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	--	--	--	--	--	--	6.5E-02	1.3E-02	na	--
PCB Total[c]	0	--	1.4E-02	na	6.4E-04	--	1.4E-02	na	6.4E-04	--	--	--	--	--	--	--	--	--	1.4E-02	na	6.4E-04
Pentachlorophenol [c]	0	4.3E+00	3.3E+00	na	3.0E+01	4.3E+00	3.3E+00	na	3.0E+01	--	--	--	--	--	--	--	--	4.3E+00	3.3E+00	na	3.0E+01
Phenol	0	--	--	na	8.6E+05	--	--	na	8.6E+05	--	--	--	--	--	--	--	--	--	--	na	8.6E+05
Pyrene	0	--	--	na	4.0E+03	--	--	na	4.0E+03	--	--	--	--	--	--	--	--	--	--	na	4.0E+03
Radionuclides	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Gross Alpha Activity (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Beta and Photon Activity (mrem/yr)	0	--	--	na	4.0E+00	--	--	na	4.0E+00	--	--	--	--	--	--	--	--	--	--	na	4.0E+00
Radium 226 + 228 (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Uranium (ug/l)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				**Most Limiting Allocations**			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	**Acute**	**Chronic**	**HH (PWS)**	**HH**
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	na	4.2E+03	2.0E+01	5.0E+00	na	4.2E+03	--	--	--	--	--	--	--	--	**2.0E+01**	**5.0E+00**	**na**	**4.2E+03**
Silver	0	1.0E+00	--	na	--	1.0E+00	--	na	--	--	--	--	--	--	--	--	--	**1.0E+00**	**--**	**na**	**--**
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
1,1,2,2-Tetrachloroethane[C]	0	--	--	na	4.0E+01	--	--	na	4.0E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.0E+01**
Tetrachloroethylene[C]	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**3.3E+01**
Thallium	0	--	--	na	4.7E-01	--	--	na	4.7E-01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.7E-01**
Toluene	0	--	--	na	6.0E+03	--	--	na	6.0E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**6.0E+03**
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Toxaphene [C]	0	7.3E-01	2.0E-04	na	2.8E-03	7.3E-01	2.0E-04	na	2.8E-03	--	--	--	--	--	--	--	--	**7.3E-01**	**2.0E-04**	**na**	**2.8E-03**
Tributyltin	0	4.6E-01	7.2E-02	na	--	4.6E-01	7.2E-02	na	--	--	--	--	--	--	--	--	--	**4.6E-01**	**7.2E-02**	**na**	**--**
1,2,4-Trichlorobenzene	0	--	--	na	7.0E+01	--	--	na	7.0E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**7.0E+01**
1,1,2-Trichloroethane[C]	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.6E+02**
Trichloroethylene [C]	0	--	--	na	3.0E+02	--	--	na	3.0E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**3.0E+02**
2,4,6-Trichlorophenol [C]	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.4E+01**
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Vinyl Chloride[C]	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.4E+01**
Zinc	0	6.5E+01	6.6E+01	na	2.6E+04	6.5E+01	6.6E+01	na	2.6E+04	--	--	--	--	--	--	--	--	**6.5E+01**	**6.6E+01**	**na**	**2.6E+04**

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
   Antidegradation WLAs are based upon a complete mix.
6. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
   = (0.1(WQC - background conc.) + background conc.) for human health
7. WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	6.4E+02
Arsenic	9.0E+01
Barium	na
Cadmium	3.9E-01
Chromium III	2.5E+01
Chromium VI	6.4E+00
Copper	2.8E+00
Iron	na
Lead	3.4E+00
Manganese	na
Mercury	4.6E-01
Nickel	6.8E+00
Selenium	3.0E+00
Silver	4.2E-01
Zinc	2.6E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

ATTACHMENT 8

February 2009 – June 2014 Effluent Data

DMR QA/QC

Permit #:VA0058891	Facility:Northeast Creek Water Treatment Plant

Due	Parameter Description	QTY AVG	Lim Avg	QTY MAX	Lim Max	CONC MIN	Lim Min	CONC AVG	Lim Avg	CONC MAX	Lim Max
10-Mar-2009	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.019	<QL	0.019
10-Apr-2009	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.019	<QL	0.019
10-May-2009	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.019	<QL	0.019
10-Jun-2009	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.019	<QL	0.019
10-Jul-2009	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.019	<QL	0.019
10-Aug-2009	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.019	<QL	0.019
10-Sep-2009	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.019	<QL	0.019
10-Oct-2009	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.019	<QL	0.019
10-Nov-2009	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.019	<QL	0.019
10-Dec-2009	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.019	<QL	0.019
10-Jan-2010	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.019	<QL	0.019
10-Feb-2010	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.019	<QL	0.019
10-Mar-2010	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Apr-2010	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-May-2010	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Jun-2010	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Jul-2010	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Aug-2010	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Sep-2010	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Oct-2010	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Nov-2010	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Dec-2010	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Jan-2011	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Feb-2011	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Mar-2011	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Apr-2011	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-May-2011	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Jun-2011	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Jul-2011	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Aug-2011	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Sep-2011	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Oct-2011	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Nov-2011	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Dec-2011	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Jan-2012	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Feb-2012	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Mar-2012	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011

10-Apr-2012	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-May-2012	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Jun-2012	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Jul-2012	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Aug-2012	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Sep-2012	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Oct-2012	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Nov-2012	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Dec-2012	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Jan-2013	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Feb-2013	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Mar-2013	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Apr-2013	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-May-2013	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Jun-2013	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Jul-2013	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Aug-2013	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Sep-2013	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Oct-2013	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Nov-2013	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Dec-2013	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Jan-2014	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Feb-2014	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Mar-2014	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Apr-2014	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-May-2014	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Jun-2014	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Jul-2014	CL2, INST RES MAX	NULL	*********	NULL	*********	NULL	*********	<QL	0.011	<QL	0.011
10-Mar-2009	FLOW	0.0443	NL	0.0477	NL	NULL	*********	NULL	*********	NULL	*********
10-Apr-2009	FLOW	0.0448	NL	0.0467	NL	NULL	*********	NULL	*********	NULL	*********
10-May-2009	FLOW	0.0514	NL	0.07	NL	NULL	*********	NULL	*********	NULL	*********
10-Jun-2009	FLOW	0.043	NL	0.0439	NL	NULL	*********	NULL	*********	NULL	*********
10-Jul-2009	FLOW	0.0445	NL	0.0464	NL	NULL	*********	NULL	*********	NULL	*********
10-Aug-2009	FLOW	0.0451	NL	0.0503	NL	NULL	*********	NULL	*********	NULL	*********
10-Sep-2009	FLOW	0.0522	NL	0.056	NL	NULL	*********	NULL	*********	NULL	*********
10-Oct-2009	FLOW	0.0468	NL	0.07	NL	NULL	*********	NULL	*********	NULL	*********
10-Nov-2009	FLOW	0.0488	NL	0.07	NL	NULL	*********	NULL	*********	NULL	*********
10-Dec-2009	FLOW	0.0432	NL	0.0446	NL	NULL	*********	NULL	*********	NULL	*********
10-Jan-2010	FLOW	0.0429	NL	0.0474	NL	NULL	*********	NULL	*********	NULL	*********
10-Feb-2010	FLOW	0.0445	NL	0.0499	NL	NULL	*********	NULL	*********	NULL	*********
10-Mar-2010	FLOW	0.0447	NL	0.0645	NL	NULL	*********	NULL	*********	NULL	*********
10-Apr-2010	FLOW	0.0435	NL	0.0522	NL	NULL	*********	NULL	*********	NULL	*********
10-May-2010	FLOW	0.0461	NL	0.07	NL	NULL	*********	NULL	*********	NULL	*********

10-Jun-2010	FLOW	0.0383	NL	0.0452	NL	NULL	*********	NULL	*********	NULL	*********
10-Jul-2010	FLOW	0.0369	NL	0.0449	NL	NULL	*********	NULL	*********	NULL	*********
10-Aug-2010	FLOW	0.0369	NL	0.043	NL	NULL	*********	NULL	*********	NULL	*********
10-Sep-2010	FLOW	0.0386	NL	0.0441	NL	NULL	*********	NULL	*********	NULL	*********
10-Oct-2010	FLOW	0.0367	NL	0.0384	NL	NULL	*********	NULL	*********	NULL	*********
10-Nov-2010	FLOW	0.0509	NL	0.07	NL	NULL	*********	NULL	*********	NULL	*********
10-Dec-2010	FLOW	0.0366	NL	0.0387	NL	NULL	*********	NULL	*********	NULL	*********
10-Jan-2011	FLOW	0.0396	NL	0.0479	NL	NULL	*********	NULL	*********	NULL	*********
10-Feb-2011	FLOW	0.0551	NL	0.1817	NL	NULL	*********	NULL	*********	NULL	*********
10-Mar-2011	FLOW	0.0389	NL	0.0433	NL	NULL	*********	NULL	*********	NULL	*********
10-Apr-2011	FLOW	0.0442	NL	0.0641	NL	NULL	*********	NULL	*********	NULL	*********
10-May-2011	FLOW	0.0401	NL	0.0543	NL	NULL	*********	NULL	*********	NULL	*********
10-Jun-2011	FLOW	0.0452	NL	0.07	NL	NULL	*********	NULL	*********	NULL	*********
10-Jul-2011	FLOW	0.0462	NL	0.07	NL	NULL	*********	NULL	*********	NULL	*********
10-Aug-2011	FLOW	0.0382	NL	0.0391	NL	NULL	*********	NULL	*********	NULL	*********
10-Sep-2011	FLOW	0.0429	NL	0.0465	NL	NULL	*********	NULL	*********	NULL	*********
10-Oct-2011	FLOW	0.0381	NL	0.0395	NL	NULL	*********	NULL	*********	NULL	*********
10-Nov-2011	FLOW	0.0371	NL	0.04	NL	NULL	*********	NULL	*********	NULL	*********
10-Dec-2011	FLOW	0.0401	NL	0.0476	NL	NULL	*********	NULL	*********	NULL	*********
10-Jan-2012	FLOW	0.0562	NL	0.07	NL	NULL	*********	NULL	*********	NULL	*********
10-Feb-2012	FLOW	0.0551	NL	0.0629	NL	NULL	*********	NULL	*********	NULL	*********
10-Mar-2012	FLOW	0.0428	NL	0.0684	NL	NULL	*********	NULL	*********	NULL	*********
10-Apr-2012	FLOW	0.036	NL	0.0413	NL	NULL	*********	NULL	*********	NULL	*********
10-May-2012	FLOW	0.0355	NL	0.0374	NL	NULL	*********	NULL	*********	NULL	*********
10-Jun-2012	FLOW	0.0353	NL	0.0376	NL	NULL	*********	NULL	*********	NULL	*********
10-Jul-2012	FLOW	0.0411	NL	0.0511	NL	NULL	*********	NULL	*********	NULL	*********
10-Aug-2012	FLOW	0.0496	NL	0.07	NL	NULL	*********	NULL	*********	NULL	*********
10-Sep-2012	FLOW	0.0375	NL	0.0389	NL	NULL	*********	NULL	*********	NULL	*********
10-Oct-2012	FLOW	0.0382	NL	0.0393	NL	NULL	*********	NULL	*********	NULL	*********
10-Nov-2012	FLOW	0.0375	NL	0.0397	NL	NULL	*********	NULL	*********	NULL	*********
10-Dec-2012	FLOW	0.0391	NL	0.0402	NL	NULL	*********	NULL	*********	NULL	*********
10-Jan-2013	FLOW	0.0484	NL	0.07	NL	NULL	*********	NULL	*********	NULL	*********
10-Feb-2013	FLOW	0.038	NL	0.0424	NL	NULL	*********	NULL	*********	NULL	*********
10-Mar-2013	FLOW	0.0371	NL	0.0414	NL	NULL	*********	NULL	*********	NULL	*********
10-Apr-2013	FLOW	0.0373	NL	0.0423	NL	NULL	*********	NULL	*********	NULL	*********
10-May-2013	FLOW	0.0402	NL	0.0472	NL	NULL	*********	NULL	*********	NULL	*********
10-Jun-2013	FLOW	0.0426	NL	0.0563	NL	NULL	*********	NULL	*********	NULL	*********
10-Jul-2013	FLOW	0.0435	NL	0.054	NL	NULL	*********	NULL	*********	NULL	*********
10-Aug-2013	FLOW	0.0408	NL	0.042	NL	NULL	*********	NULL	*********	NULL	*********
10-Sep-2013	FLOW	0.0401	NL	0.0417	NL	NULL	*********	NULL	*********	NULL	*********
10-Oct-2013	FLOW	0.0501	NL	0.07	NL	NULL	*********	NULL	*********	NULL	*********
10-Nov-2013	FLOW	0.0391	NL	0.0426	NL	NULL	*********	NULL	*********	NULL	*********
10-Dec-2013	FLOW	0.0409	NL	0.0418	NL	NULL	*********	NULL	*********	NULL	*********

10-Jan-2014	FLOW	0.038	NL	0.0417	NL	NULL	*********	NULL	*********	NULL	*********
10-Feb-2014	FLOW	0.0392	NL	0.0405	NL	NULL	*********	NULL	*********	NULL	*********
10-Mar-2014	FLOW	0.04	NL	0.0437	NL	NULL	*********	NULL	*********	NULL	*********
10-Apr-2014	FLOW	0.0395	NL	0.0416	NL	NULL	*********	NULL	*********	NULL	*********
10-May-2014	FLOW	0.0412	NL	0.045	NL	NULL	*********	NULL	*********	NULL	*********
10-Jun-2014	FLOW	0.034	NL	0.04	NL	NULL	*********	NULL	*********	NULL	*********
10-Jul-2014	FLOW	0.0469	NL	0.07	NL	NULL	*********	NULL	*********	NULL	*********
10-Mar-2009	pH	NULL	*********	NULL	*********	6.46	6	NULL	*********	7.11	9
10-Apr-2009	pH	NULL	*********	NULL	*********	6.2	6	NULL	*********	7.36	9
10-May-2009	pH	NULL	*********	NULL	*********	6.22	6	NULL	*********	6.78	9
10-Jun-2009	pH	NULL	*********	NULL	*********	6.61	6	NULL	*********	6.96	9
10-Jul-2009	pH	NULL	*********	NULL	*********	7.32	6	NULL	*********	8.71	9
10-Aug-2009	pH	NULL	*********	NULL	*********	6.71	6	NULL	*********	8.71	9
10-Sep-2009	pH	NULL	*********	NULL	*********	6.73	6	NULL	*********	6.84	9
10-Oct-2009	pH	NULL	*********	NULL	*********	6.2	6	NULL	*********	6.71	9
10-Nov-2009	pH	NULL	*********	NULL	*********	6.27	6	NULL	*********	6.78	9
10-Dec-2009	pH	NULL	*********	NULL	*********	6.38	6	NULL	*********	6.98	9
10-Jan-2010	pH	NULL	*********	NULL	*********	6.46	6	NULL	*********	6.96	9
10-Feb-2010	pH	NULL	*********	NULL	*********	6.63	6	NULL	*********	8.44	9
10-Mar-2010	pH	NULL	*********	NULL	*********	6.51	6	NULL	*********	7.63	9
10-Apr-2010	pH	NULL	*********	NULL	*********	6.72	6	NULL	*********	8.42	9
10-May-2010	pH	NULL	*********	NULL	*********	6.51	6	NULL	*********	7.21	9
10-Jun-2010	pH	NULL	*********	NULL	*********	6.86	6	NULL	*********	8.81	9
10-Jul-2010	pH	NULL	*********	NULL	*********	7.26	6	NULL	*********	8.31	9
10-Aug-2010	pH	NULL	*********	NULL	*********	7.04	6	NULL	*********	7.34	9
10-Sep-2010	pH	NULL	*********	NULL	*********	6.96	6	NULL	*********	7.17	9
10-Oct-2010	pH	NULL	*********	NULL	*********	7.02	6	NULL	*********	8.51	9
10-Nov-2010	pH	NULL	*********	NULL	*********	6.57	6	NULL	*********	6.96	9
10-Dec-2010	pH	NULL	*********	NULL	*********	6.44	6	NULL	*********	6.73	9
10-Jan-2011	pH	NULL	*********	NULL	*********	6.62	6	NULL	*********	6.81	9
10-Feb-2011	pH	NULL	*********	NULL	*********	6.68	6	NULL	*********	7.14	9
10-Mar-2011	pH	NULL	*********	NULL	*********	6.69	6	NULL	*********	7.37	9
10-Apr-2011	pH	NULL	*********	NULL	*********	6.51	6	NULL	*********	7.44	9
10-May-2011	pH	NULL	*********	NULL	*********	6.63	6	NULL	*********	8.34	9
10-Jun-2011	pH	NULL	*********	NULL	*********	6.67	6	NULL	*********	7.09	9
10-Jul-2011	pH	NULL	*********	NULL	*********	6.79	6	NULL	*********	7.42	9
10-Aug-2011	pH	NULL	*********	NULL	*********	6.32	6	NULL	*********	6.73	9
10-Sep-2011	pH	NULL	*********	NULL	*********	6.55	6	NULL	*********	6.88	9
10-Oct-2011	pH	NULL	*********	NULL	*********	6.55	6	NULL	*********	6.79	9
10-Nov-2011	pH	NULL	*********	NULL	*********	6.4	6	NULL	*********	6.73	9
10-Dec-2011	pH	NULL	*********	NULL	*********	6.42	6	NULL	*********	6.72	9
10-Jan-2012	pH	NULL	*********	NULL	*********	6.28	6	NULL	*********	6.76	9
10-Feb-2012	pH	NULL	*********	NULL	*********	6.36	6	NULL	*********	6.79	9

10-Mar-2012	pH	NULL	*********	NULL	*********	6.54	6	NULL	*********	6.82	9
10-Apr-2012	pH	NULL	*********	NULL	*********	6.53	6	NULL	*********	6.76	9
10-May-2012	pH	NULL	*********	NULL	*********	6.21	6	NULL	*********	6.59	9
10-Jun-2012	pH	NULL	*********	NULL	*********	6.31	6	NULL	*********	6.31	9
10-Jul-2012	pH	NULL	*********	NULL	*********	6.31	6	NULL	*********	6.57	9
10-Aug-2012	pH	NULL	*********	NULL	*********	6.11	6	NULL	*********	6.89	9
10-Sep-2012	pH	NULL	*********	NULL	*********	6.68	6	NULL	*********	6.91	9
10-Oct-2012	pH	NULL	*********	NULL	*********	6.59	6	NULL	*********	6.64	9
10-Nov-2012	pH	NULL	*********	NULL	*********	6.48	6	NULL	*********	6.69	9
10-Dec-2012	pH	NULL	*********	NULL	*********	6.17	6	NULL	*********	6.65	9
10-Jan-2013	pH	NULL	*********	NULL	*********	6.53	6	NULL	*********	6.74	9
10-Feb-2013	pH	NULL	*********	NULL	*********	6.83	6	NULL	*********	7.02	9
10-Mar-2013	pH	NULL	*********	NULL	*********	6.61	6	NULL	*********	7.05	9
10-Apr-2013	pH	NULL	*********	NULL	*********	6.65	6	NULL	*********	7.11	9
10-May-2013	pH	NULL	*********	NULL	*********	6.22	6	NULL	*********	6.86	9
10-Jun-2013	pH	NULL	*********	NULL	*********	6.11	6	NULL	*********	7.24	9
10-Jul-2013	pH	NULL	*********	NULL	*********	6.83	6	NULL	*********	7.4	9
10-Aug-2013	pH	NULL	*********	NULL	*********	6.72	6	NULL	*********	6.81	9
10-Sep-2013	pH	NULL	*********	NULL	*********	6.59	6	NULL	*********	6.68	9
10-Oct-2013	pH	NULL	*********	NULL	*********	6.17	6	NULL	*********	6.78	9
10-Nov-2013	pH	NULL	*********	NULL	*********	6.2	6	NULL	*********	6.56	9
10-Dec-2013	pH	NULL	*********	NULL	*********	6.3	6	NULL	*********	6.82	9
10-Jan-2014	pH	NULL	*********	NULL	*********	6.57	6	NULL	*********	6.92	9
10-Feb-2014	pH	NULL	*********	NULL	*********	6.5	6	NULL	*********	6.64	9
10-Mar-2014	pH	NULL	*********	NULL	*********	6.4	6	NULL	*********	6.64	9
10-Apr-2014	pH	NULL	*********	NULL	*********	6.51	6	NULL	*********	6.64	9
10-May-2014	pH	NULL	*********	NULL	*********	6.56	6	NULL	*********	6.74	9
10-Jun-2014	pH	NULL	*********	NULL	*********	6.69	6	NULL	*********	6.94	9
10-Jul-2014	pH	NULL	*********	NULL	*********	6.34	6	NULL	*********	6.73	9
							90th	7.4	10th	6.3	
10-Mar-2009	TSS	NULL	*********	NULL	*********	NULL	*********	2.6	30	2.6	60
10-Apr-2009	TSS	NULL	*********	NULL	*********	NULL	*********	1.8	30	1.8	60
10-May-2009	TSS	NULL	*********	NULL	*********	NULL	*********	2	30	2	60
10-Jun-2009	TSS	NULL	*********	NULL	*********	NULL	*********	1.6	30	1.6	60
10-Jul-2009	TSS	NULL	*********	NULL	*********	NULL	*********	3.8	30	3.8	60
10-Aug-2009	TSS	NULL	*********	NULL	*********	NULL	*********	4.5	30	4.5	60
10-Sep-2009	TSS	NULL	*********	NULL	*********	NULL	*********	3.5	30	3.5	60
10-Oct-2009	TSS	NULL	*********	NULL	*********	NULL	*********	4.6	30	4.6	60
10-Nov-2009	TSS	NULL	*********	NULL	*********	NULL	*********	3.6	30	3.6	60
10-Dec-2009	TSS	NULL	*********	NULL	*********	NULL	*********	1.8	30	1.8	60
10-Jan-2010	TSS	NULL	*********	NULL	*********	NULL	*********	2.7	30	2.7	60
10-Feb-2010	TSS	NULL	*********	NULL	*********	NULL	*********	3.1	30	3.1	60

10-Mar-2010	TSS	NULL	*********	NULL	*********	NULL	*********	2.1	30	2.1	60
10-Apr-2010	TSS	NULL	*********	NULL	*********	NULL	*********	1.5	30	1.5	60
10-May-2010	TSS	NULL	*********	NULL	*********	NULL	*********	2.1	30	2.1	60
10-Jun-2010	TSS	NULL	*********	NULL	*********	NULL	*********	2.1	30	2.1	60
10-Jul-2010	TSS	NULL	*********	NULL	*********	NULL	*********	2.2	30	2.2	60
10-Aug-2010	TSS	NULL	*********	NULL	*********	NULL	*********	1.4	30	1.4	60
10-Sep-2010	TSS	NULL	*********	NULL	*********	NULL	*********	2.4	30	2.4	60
10-Oct-2010	TSS	NULL	*********	NULL	*********	NULL	*********	2.7	30	2.7	60
10-Nov-2010	TSS	NULL	*********	NULL	*********	NULL	*********	1.1	30	1.1	60
10-Dec-2010	TSS	NULL	*********	NULL	*********	NULL	*********	<QL	30	<QL	60
10-Jan-2011	TSS	NULL	*********	NULL	*********	NULL	*********	<QL	30	<QL	60
10-Feb-2011	TSS	NULL	*********	NULL	*********	NULL	*********	1.3	30	1.3	60
10-Mar-2011	TSS	NULL	*********	NULL	*********	NULL	*********	1.8	30	1.8	60
10-Apr-2011	TSS	NULL	*********	NULL	*********	NULL	*********	2.7	30	2.7	60
10-May-2011	TSS	NULL	*********	NULL	*********	NULL	*********	5.6	30	5.6	60
10-Jun-2011	TSS	NULL	*********	NULL	*********	NULL	*********	1.5	30	1.5	60
10-Jul-2011	TSS	NULL	*********	NULL	*********	NULL	*********	3.19	30	3.19	60
10-Aug-2011	TSS	NULL	*********	NULL	*********	NULL	*********	1.8	30	1.8	60
10-Sep-2011	TSS	NULL	*********	NULL	*********	NULL	*********	1.4	30	1.4	60
10-Oct-2011	TSS	NULL	*********	NULL	*********	NULL	*********	2.9	30	2.9	60
10-Nov-2011	TSS	NULL	*********	NULL	*********	NULL	*********	2.9	30	2.9	60
10-Dec-2011	TSS	NULL	*********	NULL	*********	NULL	*********	2.2	30	2.2	60
10-Jan-2012	TSS	NULL	*********	NULL	*********	NULL	*********	2.4	30	2.4	60
10-Feb-2012	TSS	NULL	*********	NULL	*********	NULL	*********	3.1	30	3.1	60
10-Mar-2012	TSS	NULL	*********	NULL	*********	NULL	*********	3.2	30	3.2	60
10-Apr-2012	TSS	NULL	*********	NULL	*********	NULL	*********	5.2	30	5.2	60
10-May-2012	TSS	NULL	*********	NULL	*********	NULL	*********	3.2	30	3.2	60
10-Jun-2012	TSS	NULL	*********	NULL	*********	NULL	*********	2.4	30	2.4	60
10-Jul-2012	TSS	NULL	*********	NULL	*********	NULL	*********	4.6	30	4.6	60
10-Aug-2012	TSS	NULL	*********	NULL	*********	NULL	*********	4.48	30	4.48	60
10-Sep-2012	TSS	NULL	*********	NULL	*********	NULL	*********	13	30	13	60
10-Oct-2012	TSS	NULL	*********	NULL	*********	NULL	*********	4.94	30	4.94	60
10-Nov-2012	TSS	NULL	*********	NULL	*********	NULL	*********	3.6	30	3.6	60
10-Dec-2012	TSS	NULL	*********	NULL	*********	NULL	*********	3.2	30	3.2	60
10-Jan-2013	TSS	NULL	*********	NULL	*********	NULL	*********	3.1	30	3.1	60
10-Feb-2013	TSS	NULL	*********	NULL	*********	NULL	*********	2.8	30	2.8	60
10-Mar-2013	TSS	NULL	*********	NULL	*********	NULL	*********	2.8	30	2.8	60
10-Apr-2013	TSS	NULL	*********	NULL	*********	NULL	*********	3.1	30	3.1	60
10-May-2013	TSS	NULL	*********	NULL	*********	NULL	*********	2.3	30	2.3	60
10-Jun-2013	TSS	NULL	*********	NULL	*********	NULL	*********	1.8	30	1.8	60
10-Jul-2013	TSS	NULL	*********	NULL	*********	NULL	*********	4.95	30	4.95	60
10-Aug-2013	TSS	NULL	*********	NULL	*********	NULL	*********	6	30	6	60
10-Sep-2013	TSS	NULL	*********	NULL	*********	NULL	*********	2.4	30	2.4	60

10-Oct-2013	TSS	NULL	*********	NULL	*********	NULL	*********	2.9	30	2.9	60
10-Nov-2013	TSS	NULL	*********	NULL	*********	NULL	*********	2.5	30	2.5	60
10-Dec-2013	TSS	NULL	*********	NULL	*********	NULL	*********	3.2	30	3.2	60
10-Jan-2014	TSS	NULL	*********	NULL	*********	NULL	*********	2.9	30	2.9	60
10-Feb-2014	TSS	NULL	*********	NULL	*********	NULL	*********	2.5	30	2.5	60
10-Mar-2014	TSS	NULL	*********	NULL	*********	NULL	*********	2.8	30	2.8	60
10-Apr-2014	TSS	NULL	*********	NULL	*********	NULL	*********	1.6	30	1.6	60
10-May-2014	TSS	NULL	*********	NULL	*********	NULL	*********	2.2	30	2.2	60
10-Jun-2014	TSS	NULL	*********	NULL	*********	NULL	*********	2.1	30	2.1	60
10-Jul-2014	TSS	NULL	*********	NULL	*********	NULL	*********	3.6	30	3.6	60

ATTACHMENT 9

Total Residual Chlorine Limit Derivation

8/19/2014 1:14:38 PM

Facility = Northeast Creek WTP
Chemical = Chlorine
Chronic averaging period = 4
WLAa = 0.019
WLAc =
Q.L. = 0.1
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 20
Variance = 144
C.V. = 0.6
97th percentile daily values = 48.6683
97th percentile 4 day average = 33.2758
97th percentile 30 day average= 24.1210
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity
Maximum Daily Limit = 0.019
Average Weekly limit = 0.019
Average Monthly LImit = 0.019

The data are:

20

ATTACHMENT 10

Public Notice

Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated wastewater into a water body in Louisa County, Virginia.

PUBLIC COMMENT PERIOD: TBD 2014 to TBD 2014

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Wastewater issued by DEQ, under the authority of the State Water Control Board

APPLICANT NAME, ADDRESS AND PERMIT NUMBER: Louisa County Water Authority
P.O. Box 9, Louisa, VA 23093
VA0058891

NAME AND ADDRESS OF FACILITY: Northeast Creek Water Treatment Plant
3380 Jefferson Highway, Louisa, VA 23093

PROJECT DESCRIPTION: Louisa County Water Authority has applied for a reissuance of a permit for the public Northeast Creek Water Treatment Plant. The applicant proposes to release treated industrial wastewaters at a rate of 0.05 million gallons per day into a water body. Sludge from the treatment process will be disposed via landfill. The facility proposes to release the treated industrial wastewaters in the Northeast Creek in Louisa County in the York River watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: pH, total suspended solids and total residual chlorine.

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by hand-delivery, email, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION: The public may review the draft permit and application at the DEQ-Northern Regional Office by appointment, or may request electronic copies of the draft permit and fact sheet.

Name: Douglas Frasier
Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193
Phone: (703) 583-3873 Email: Douglas.Frasier@deq.virginia.gov Fax: (703) 583-3821